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THE COAL AND IRON RECORD.

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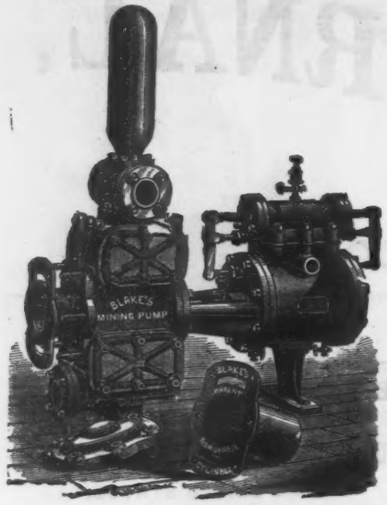

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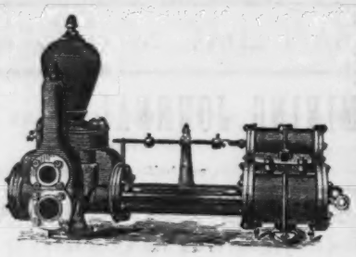

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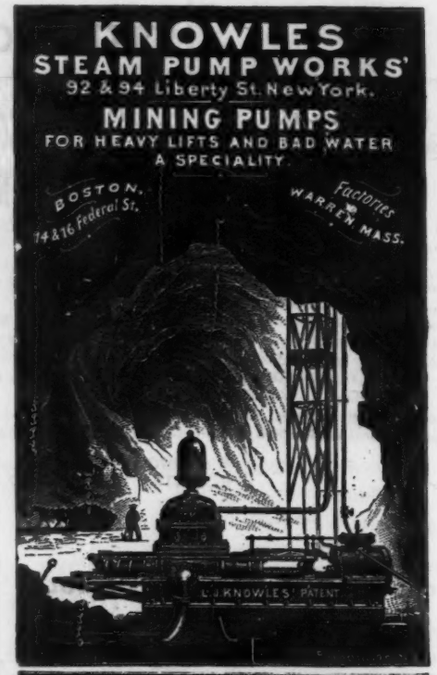

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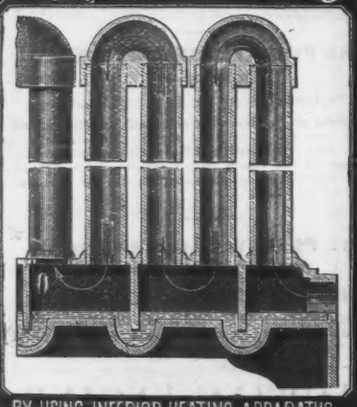

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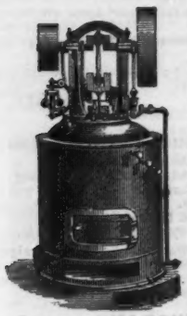

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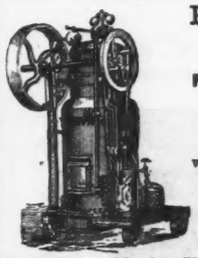

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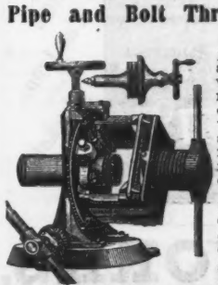

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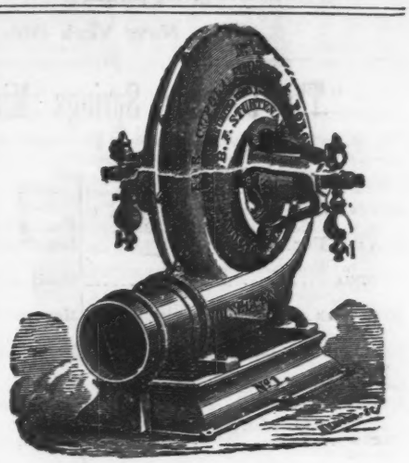

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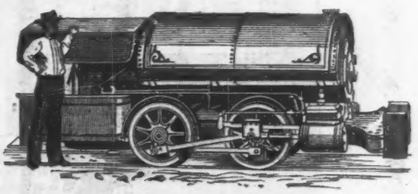

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Extract from report of Committee of Civ. Engs. appointed by Franklin Inst. to examine H. & B.'s new Transit (Dec. 1871): "It exhibits several novelties of construction which, in the opinion of the committee, render it superior to those now in use, and in its opinion the deviations which they have made from the common styles of Transit are decided improvements."

JOHN C. TRAUT WINE, Chairman.

REG. JUNE 27TH 1871.

Descriptive and Illustrated Price List sent Post-paid, on Application.

THE ENGINEERING AND MINING JOURNAL.

RICHARD P. ROTHWELL, C. E., M. E.
ROSSITER W. RAYMOND Ph. D. } Editors.

NOTE.—Communications relative to the editorial management should be addressed to Mr. ROTHWELL. The articles written by Mr. Raymond will be signed with a star.

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Our Technical Societies.

OWING to delay in the mails we were unable to publish any part of President HOLLEY's admirable address last week. We doubt not it will now be read with undiminished interest and profit by the large class to whom it is addressed. We also devote a large space to the report of the Cleveland meeting, one of the most profitable and agreeable the Institute has ever had; the long list (104) of new members shows how fully the Institute is identified with the iron and steel, as well as mining, interests of the country. The membership now includes nearly all the important and progressive iron manufacturers of America, and the very able papers on iron and steel, read by some of these gentlemen, are valuable contributions to professional literature. Nor are our Mining Engineers, proper, behind their metallurgical *confrères*, as the large number of valuable papers on mining subjects, read at this and other meetings, abundantly testifies. The members can refer with pardonable pride to the grand record of the Institute ; there has been no other scientific technical society, either in this country or in Europe, that has made, in the same time, so many practically valuable contributions to the cause of scientific mining and metallurgy as has this Institute.

When it is borne in mind that the report of the Cleveland meeting refers to but one out of three held during the year, the work done, and the accession to the membership, will be more fully appreciated.

Our space is so fully occupied this week with the report of the Institute of Mining Engineers, and with that of the Gas Light Association, that we have little room left for aught else, some valuable illustrated articles being among the number crowded out. The publication of the papers of the Institute will follow in due course, in succeeding numbers ; the report of the meeting of Gas Engineers will be continued on alternate weeks, in such small instalments as the conservative policy of the Association, or the enterprise of the *Gas Light Journal*, may vouchsafe.

This number of the JOURNAL will be sent to all members of the Gas Light Association, whether subscribers or not, and also to all the important gas companies throughout the country. We hope to hear from many of them,—from all, in fact, that desire to get every week reliable commercial reports of the coal, iron and stock markets, and information on all subjects of interest in gas making, mining, metallurgy, etc.

The Society of Civil Engineers held its annual meeting for the election of officers in this city on the 4th inst. Our crowded columns will not permit of further notice of this meeting, but in our next will be found a list of the new officers and a brief report of the meeting.

The Policy of the Gas-Light Association.

THE American Gas-Light Association can be of immense benefit both to the producers and consumers of gas, by simply practising what it preaches in its constitution. It was organized in a field much needing the illuminating agents—scientific knowledge and a spirit of progress—and it was, and is, hoped that the progressive engineers and managers, men who have made themselves familiar with the scientific, as well as the purely practical, questions involved in the manufacture and distribution of illuminating gas, will exert a greater influence upon its policy than those highly respectable "conservative," "old fogy," or so-called "practical" managers, who carry on their works by the rule of thumb, and who are far more desirous of preventing the public from knowing what the profits on gas making are, than to introduce such improvements as will enable them to reduce its cost and selling price.

The second article of the Constitution of the Association reads as follows :

"The objects of this Association shall be : the promotion and advancement of knowledge, scientific and practical, in all matters relating to the construction and management of gas works, and the manufacture, distribution and consumption of illuminating gas, to the end that its cost may be cheapened and its consumption increased."

What a farce these brave *words* seem if read in the light of the *acts* of the Association, when any proposition comes before it that has for its object to cheapen the cost of gas by rendering unnecessary the enormous outlay for plant now considered essential in our gas works! And how laughable the enunciation of the following further objects of the Association :

"The inducement and extension of more cordial and friendly relations between the manufacturers of illuminating gas and their patrons, based upon mutuality of interests and a recognition by both of the fact that each have rights which the other should respect,"

when the public and reporters for independent journals are rigidly excluded from the meetings, for fear "the patrons" should learn just how they are taxed, and not unfrequently overtaxed, by these "friendly" manufacturers!

The ENGINEERING AND MINING JOURNAL, taking for its motto the above avowed objects of the Association, made application to the Secretary for permission to report the recent meeting, and was denied. Among the reasons given for the exclusion of our reporters, was a great desire to keep the discussions out of the daily papers, and, apparently, a great reluctance to allow our dear "patrons," the public, from knowing anything about the cost of making gas or the profits of the great monopolists. We were informed that this decision of the Executive Council of the Association was arrived at in a meeting of the President, the Secretary, and a gentleman who is neither a member nor an officer of the Association, but who represented our pliable and inoffensive contemporary, the *Gas-Light Journal*. It seems, therefore, that Article IX., of the Constitution, which says that "all questions in Executive Committee shall be decided by a majority vote, and *five* members shall be a quorum," is as much a delusion as the high-sounding objects of the Association quoted above. We have frequently heard it asserted that this Association is a convenient means of subordinating the policy of the gas manufacturers throughout the country to the will of one large concern, or one individual, and though the action just referred to adds great force to that opinion, yet we have no idea that such a policy, when brought to the attention of the intelligent and progressive members of the Association, can possibly long remain in the ascendant.

In the face of this decision of the President, not to admit reporters, nor the public, except by special invitation, and then with the distinct request that notes of what transpired would not be published, we cannot but regard as exquisite satire the President's opening address, where he says "it is unnecessary for me to remind you of the obligations you are under to those whose interests you represent, and *to the public at large.* * * * We are not here to advance the interests of any one man, or any one company ; but we are here to tell each to the other what we know of the business in which we are engaged, which is calculated *to advance the general good, and promote harmony between the manufacturer and the consumer. There is nothing in our business,* with which I am acquainted, after an experience of forty years, that *we need make a secret of, which all the world may not know.* * * * *For our business is a business of truth and conscience.*"

What a grim smile this pungent humor will provoke on the countenances of those dear consumers, "our patrons," who receive a twelve or eleven-candle gas, though contracting and paying for one of fifteen-candle power. After a contemplation of the unnecessarily, and, sometimes, outrageously high price of a poor material, and glancing over our gas stock quotations, where they will find : "—Stock, par value $50, bid, $310 ;—stock, par value $20, bid, $154 ;—stock, par value $25, bid, $250," etc., etc., "our patrons" will be able to appreciate the full force of this solicitude for the interests of the public, and the delicate humor and pious satire that lie, scarcely concealed, in the President's address.

The great need of the Gas-Light Association is a higher illuminating power in its councils, that will enable its managers to perceive more clearly the need of greater skill and knowledge in the manufacture of gas, and their just obligations to consumers. Such a policy as that we criticise makes the title of the association a misnomer, and forcibly recalls the well-worn and familiar quotation—*lucus a non lucendo!*

This journal has for its object the "advancement of knowledge, scientific and practical," in the manufacture of gas, by which the interests of both the consumers and manufacturers will be promoted. It has no special hobby to ride, nor any patent process to advocate ; it proposes to advocate and encourage every effort to improve and cheapen illuminating gas, and it will give gas engineers and managers of gas works information of practical utility, and fair criticism of processes, new and old, without revision by the representatives or in the interest of any special concern. We cordially invite the co-operation of all progressive gas engineers, managers, or others interested in the subject, and shall be pleased to have the views of members of the Association on the policy here criticised.

The day has gone by when the Gas Association can close its doors on the public, and yet claim its confidence. It is true, manufacturers and consumers have each rights that the other should respect, but the public is naturally, and with reason, suspicious of great monopolies, and of any course that has even the appearance of concealment.

Since writing the above we have received from Mr. W. H. PRICE, one of the Vice-presidents of the Gas-Light Association, the frank, outspoken disavowal of any sympathy with the policy we have noticed. This letter will be found in another column. It is to such men as Mr. PRICE that we, and all others who have the interests of gas engineering at heart, look for those enlightened views, and honest endeavors to put them in practice, which will make the Association worthy to represent its important trusts.

It appears somewhat strange that a policy so open to criticism should have been adopted by a few officers of the Association, without consultation with others who were members of the Executive Committee. Possibly, Mr. PRICE will be again surprised to learn that a formal proposition was made by the proprietors of this journal, to represent the Association on the same conditions as it now represents the American Institute of Mining Engineers. This proposition was never, we are informed, laid before the Association or its officers, though handed to the Secretary before the meeting commenced. It was simply pigeon-holed. Could the reason for this have been that the large circulation of the ENGINEERING AND MINING JOURNAL would give too wide publicity to the transactions of the Association?

Some Pressing Needs of our Iron and Steel Manufactures.

[ADDRESS of President A. L. HOLLEY at the opening of the Cleveland Meeting of the American Institute of Mining Engineers, October 26, 1875.]

AFTER a fitting acknowledgment of the welcoming address of Col. WHITTLESEY, and a tribute to the City of Cleveland, as the great center of oil-refining, the distribution of Lake Superior ore, and various manufactures of iron and steel, Mr. HOLLEY continued as follows:

It has been customary at our opening sessions, for the presiding officer to address you on the general development of one or another of our several professions, or upon some important feature of mining or metallurgical engineering. It is somewhat embarrassing to his successor that our former President, Dr. RAYMOND, expert as he is in every one of these professions, has been accustomed to keep them all, in their turn, prominently before you.

In selecting for this occasion a subject necessarily connected with the iron and steel industries, I have thought that a review of these manufactures, with reference to some of their more pressing needs for improvement, will be more timely than a general or statistical paper. It is, I am aware, comparatively easy and positively useless, if not a little impertinent, for me to preach in general terms—to tell manufacturers that they should work more economically, and make better products, and utilize waste, and develop labor-saving machinery. I shall endeavor to confine my remarks to a few specific defects of practice and management, and to their equally specific and more or less developed remedies.

That serious defects exist; that they must be remedied; that the manufacture is indeed already on the verge of transition, will be generally admitted. But it cannot be revolutionized all at once, however desirable the technical results might be, for that would bankrupt the business at large. We cannot afford to pull down and rebuild all our blast-furnaces that do not make a ton of pig iron with 25 cwt. of fuel; nor to replace all our hand-puddling furnaces with revolving ones, even if we could select the best revolver. Although the soft steels promise to supplant iron for most structural purposes, there are neither money nor present market to warrant all at once replacing our iron works, or half of them, with steel works.

Since, then, these manufactures can neither stand still nor be suddenly metamorphosed, their managers are saying to one another: "We must feel our way into larger development; we must work *gradually* into better practice; we must improve a little at a time"—all very true—but some of us have been saying it so long and so complacently, that it is rather acquiring the flavor of a pretext for doing next to nothing at all.

Whatever economies may be made by little improvements of old tools and processes, the grand results are to come from thorough and radical changes, not necessarily *in all departments at once*, but sweeping when they are introduced. Putting a slightly less wire-drawing cut-off upon an old steam-engine, promoting a little better combustion in a heating furnace, empirically experimenting with refractory materials and purifying compounds, are all more or less useful, but the "survival of the fittest" is to be decided on larger issues than these.

Among the more important and decided improvements demanded in this critical situation of affairs, are the following:

I.—*Cheap Power.* The cost of coal to drive the machinery of an average American Bessemer plant, when applied through engines requiring, as they generally do, 5 or 6 pounds of it per hour for one horse-power, averages about $1 50 per ton of ingots. Engine builders are ready to guarantee a duty of 2½ lb. per hour per horse-power, and it is perfectly well known that a large number of engines, stationary and marine, are running at from 2¼ to 3 lb. The saving of one-half the steam-coal in a Bessemer works would pay for a quarter of the total labor in the manufacture of ingots, or for all the refractory materials employed, or for all the royalties. In some works it would not be less than $50,000 per year.

The average cost of coal required to drive a rail and blooming mill is nearly $1 50 per ton of rails. Although mill engines have the advantage over blowing engines, of high speed, and are often of good type, yet it is probable that taking all our steel rail mills together, a third of this cost could be readily saved, and this saving would be an aggregate of $175,000 per year.

The economies effected by better steam-engines are not exceptional—they are of every-day occurrence. They have revolutionized the ocean service and have completely changed the land service, especially in New England, where fuel is dear. As one of many examples, I quote the Troy steel-rail mill engine. This had a cylinder of 54 in. diameter by 3-foot stroke, and required the firing of 5 auxiliary boilers. A 44-inch Corliss cylinder was substituted, 9 per cent. of speed and 30 per cent. of work were added, and yet 3 boilers were thrown off, and the economy in fuel was about $25,000 per year.

It will not be questioned, I think, that regenerative furnaces will gradually, but inevitably, take the place of the ordinary heating, puddling and melting furnaces, thus preventing the application of unspent furnace heat to steam generation. For this reason, economical boilers and engines are all the more important. When every rolling-mill and forge comes to burn coal for steam, the saving of a couple of pounds per hour per horse-power will be something enormous in the aggregate. Again, while many schemes for blast-furnace improvement are speculative, almost any expense to increase the economy of blowing-engines is warranted. Making uniform iron out of raw materials that cannot be uniform, requires reserve of power both in the temperature and the force and volume of blast. As coke and anthracite furnish barely gas enough under the best circumstances, combustion under boilers and the use of steam must be in the highest degree economical to meet the worst circumstances.

The blowing engines of the country are usually very wasteful of steam, by reason of wire-drawing valve gear, and especially of slow piston speed. The latter is perhaps the greatest, and the least recognized, of all steam-engine defects. When steam enters the cylinder at say 75 lb. pressure and 320° temperature, a part of it is condensed into water before it can heat the walls of the cylinder to the same temperature. As the steam then expands from the point of cut-off down to the atmospheric pressure, its temperature falls from 320° to 212°, and as it falls, this water is re-evaporated by the heat in the walls of the cylinder, thus cooling them down to 212°. The steam thus formed passes off with the exhaust into the atmosphere, and is lost. At the next stroke, steam at 320°, impinging against walls at 212°, is condensed, as before, and so this perpetual waste goes on. Now, we can conceive of a piston moving so fast that the walls of the cylinder would not have time to be measurably cooled; and we can imagine a piston moving so slowly that nearly all the steam would be condensed. In practice, the indicator-card, which reveals the real work of the steam in the cylinder, shows a very slight loss from condensation in the high-speed engine, but it shows in engines moving at very slow speeds more heat wasted by condensation than there is utilized.

Many of the rolling mill engines of the country are of good type, but most of them will use 6 lb. of coal per horse-power, despite their comparatively high speed. What shall we say of mill engines without cut-offs or condensation, where coal is dear, and where steam is made by firing under boilers?

Now, why does this general wastefulness of steam go on from year to year? Mill managers have a ready answer. They want "a strong, simple engine, that will stand the rough attendance it gets in a mill, and that won't break down." The first reason is ridiculous; yet, you can find plenty of mill engines with leaky pistons, out of line, and wasting their cost every year, to save a dollar a day more pay to an engine-driver. The second reason is perfectly sound. An engine may better waste a few thousand tons of coal, if it only makes a regular business of it, than to go to pieces without notice, in the middle of a time contract. But the inference that an engine which is economical of steam, is, for that reason, more likely to break down, is totally without foundation. The commerce of the Atlantic Ocean is largely done by compound engines, which are just twice as "complicated" as single cylinder engines, and which run with 2½ to 3 lb. of coal, and which are subject, at every pitch of the ship—many thousands of times every voyage—to the violent strains of the severe plunging in and out of water—strains which often shake the ship from stem to stern; but we rarely hear of these engines breaking down. I have recently taken time to examine, in detail, the working of eleven specimens of one of the most economical, highly-finished, and delicately-adjusted engine ever built—the Porter-Allen engine—and I find them notably free from breakdowns and abnormal wear. They had been running from 2½ to 6 years, and in some cases the working parts had not been readjusted at all. It is true that some of the earlier Corliss mill engines were too light, but this had nothing whatever to do with their economical steam distribution. Probably there are more successful engines of this type than of any other.

The stability and durability of an engine is simply a question of good proportions, materials and workmanship. Of course, a piston that takes the boiler-pressure at the first opening of the valve, receives more force than one which gets only 60 or 70 per cent. of it, and that not till quarter stroke, of which there are many examples. But on the PORTER-ALLEN demonstration, this force is required to start the very heavy reciprocating parts, which, in turn, give it out to the crank during the decrease of cylinder pressure by expansion, so that the strains on the crank-pin are not necessarily greater with good than with bad steam admission. If the sudden impact of steam is hard on machinery, what should be the result of a 10-ton hammer-head, falling 6 or 8 feet upon an 80-ton anvil? And yet, steam-hammers are made to run for years. Some of the most economical valve-gears are not complex; the complex ones a boy can work by hand, so that they are not under dangerous strains, and rarely break down. Finally, the mill engine, by means of the interposed fly-wheel, is relieved from all violent shocks, while the marine engine has no such protection.

The objection, therefore, that engines are liable to breakdowns and delays, because they are economical of steam, will not hold. If the builders of such engines do not make them strong enough, the engineer of an iron or steel works ought to know it beforehand, and to know what changes to specify. There are numerous examples of sturdy engines which he can study. I will venture the opinion that more breakdowns are caused by accepting the lowest bid for engines, than by all other causes combined.

There is a great temptation to save the heavy cost of radical change, by patching up old engines, attaching condensers, applying cut-off valves, enlarging cylinders to get more expansion, running faster by means of change of gearing or belts. All these things may save fuel, but do they not stand in the way of a greater economy, by constantly adding cost to the old engine, and so giving it a long lease of life? No man ever throws out an engine which he has just rebuilt, however bad it may be. The way to get the greatest possible profit out of an engine of bad type, is to melt it down in a cupola. The excuse is often made that a new engine cannot be afforded. One would suppose that an establishment which can afford to waste $20,000 a year in steam coal, might afford to lay up half that sum every year to invest in better engines.

The blowing-engine presents a larger problem than mere perfection of valve

gear. The air-piston should not run fast; the steam-piston must not run slow. Gearing a pair of small engines, making, say, 150 revolutions, to a large air piston making 25, entirely overcomes the objectionable features of gearing, which only works harshly when the small wheel is driven. There is a possibility by this arrangement, of saving more steam than can be done even by compounding, which would cost about the same. Compound engines have certainly achieved a very great success for marine, pumping, blowing and other large-scale uses. They, however, involve condensation, and either a large water supply or extensive cooling ponds, both of which are often very costly, and in some cases impracticable.

The use of the indicator—not the vile instrument made only to sell, but ELLIOTT BRO'S. Richards indicator—should be a matter of regular practice. I will venture to say that a high degree of steam engine economy cannot be maintained without the regular application of the indicator, to show whether or not the condition and functions of the machine are normal and healthy. Beyond a few hundred dollars cost in preparation, the expense of taking cards once a week is absolutely nothing.

There are vast numbers of bad boilers, as anyone will conclude who takes pains to observe the innumerable proportions of grate, combustion chamber and heating-surface in use for the same kind of fuel. Fortunately for mill owners, great improvements rarely require such sweeping changes in boilers as in engines. The changes, however, should be scientifically devised. Altering the style of a grate when its surface is insufficient, or increasing draft when combustion room is too small, will not promote much economy. The employment of a commission of experts to ascertain the real nature of the defect would be a paying investment in a great many cases. The diseases of boilers and their setting are often obscure, and the diagnosis of a cheap engine driver is not infallible. Perfect combustion, while boilers are being fired by hand, is probably impracticable, but bad combustion all the time is entirely unnecessary. Steam-induced air jets sweeping over the surface of the fire, where there is heat enough to ignite the combustible mixture thus formed, is an effective and cheap arrangement. Mechanical firing, as done at Barrow and other works abroad, promotes almost continuously perfect combustion. I cannot dwell upon this subject; it would require a treatise by itself.

II.—*Improved Heating Furnaces.*—The commercial importance of this subject is no less than that of the preceding. The coal-fired reverberatory furnace, however skillfully managed, must be wasteful of both fuel and metal. Much of the coal placed on the grate is lost through the grate; the very irregular volume of air passing unconsumed through the solid fuel is at one time insufficient to unite with the combustible gases over it, and at another time great and undistributed enough to go bodily over the bridge and consume the metal on the hearth; combustion cannot be perfected when firing is done by hand, without an excess of air which will waste the metal, so that the flame must always be smoky. The heat passing out of the furnace may be utilized under boilers, but not as economically as the same quantity of heat can be under coal-fired boilers, nor any better than waste heat can be utilized in regenerators.

Do iron-makers realize the enormous loss due to oxidation? An iron rail mill making 40,000 tons of product, heating all the material twice, and oxidizing not less than 8 per cent. of it at each heat, would, at present prices, burn up more than $200,000 worth of iron in a year. Upon averaging a number of results, I find the saving in the oxidation of iron in regenerative gas furnaces, as compared with coal furnaces, to be over 3 per cent. In one case of first-rate practice with both furnaces, on small iron billets, it is 3.32 per cent.; in another case of good average practice on large iron piles, it is 4.45 per cent. In heating iron piles for plates, the waste in the ordinary furnace has been in some cases as high as 15 per cent., while in Siemens' furnaces, which have been substituted in the same works, it has been as low as 4 per cent. The smaller of these savings would amount, in the rail practice we are considering, to some $70,000 per year, which would pay for half the labor on rails, or it would pay above 20 per cent. on the cost of a rail mill. The oxidation of steel is somewhat less in either furnace, because the required temperature is lower; but the proportion of loss appears to be about the same, so that the economy of the gas furnace is also very important in heating steel.

The amounts of fuel used in gas furnaces are surprisingly various in different works. They run from 350 to 650 lb. per ton of rail piles and blooms, and steam coal varies similarly. These figures indicate very bad working of furnaces in some cases; and the absence of all definite data in some other cases, as to steam and gas fuel used, indicates, at least, that bad working may be going on without the knowledge of the management. The fuel for heating rail piles and blooms in ordinary coal furnaces also varies from 700 to 1200 lb. per ton, the differences not being wholly due to plant or management, but to quality of coal. With ordinarily bad boilers and engines, the saving of fuel, including steam coal, by the use of the gas furnace, varies from 5 to 25 per cent. A fair comparison of the two furnaces should be based on the best practice in both cases. If coal furnaces lose heat enough up chimney to make steam for wasteful engines, no economy of fuel is attained by using economical ones. But as regenerative gas furnaces, which make no steam, are necessary to the minimum oxidation of the metal heated, steam must be generated by firing under boilers, so that good engines in this case have an unlimited opportunity to save fuel. Thus the gas furnace economizes, first, and chiefly, in oxidation; second, in fuel directly; third, in fuel indirectly, by giving economical engines a chance; and fourth, it also saves largely in quality of fuel, as cheap slack and small coal may, in most cases, be burned in gas producers, but not in coal furnaces. To these advantages must be added decreased loss of coal due to burning it in one concentrated nest of producers, rather than all over a rolling-mill, and the general convenience and economy of avoiding the handling and storage of coal in various parts of the works. Still another important advantage of the regenerative gas furnace is the facility it affords for varying the chemical character of the flame, and more especially for maintaining the neutrality and perfect uniformity of the flame. This furnace seems essential to the production of the high temperatures required in the Martin steel process. The Siemens furnace has, within the last few years, been so highly perfected in its proportions and details, that its adaptation and working are no longer subject to any unusual risk or embarrassments.

The most imperfect feature of the gas-fuel system, at least in the English and American practice, is the gas-producer, which has not been materially improved for years. As it is simply a fire-box with a grate below, and is subject to variation in firing, in stirring, in the caking of the coal, in the holes in the fire through which carbonic acid gas and air may pass up into the chamber, and in air admisssion due to the irregular formation and removal of clinkers, the most careful attendance cannot insure the regular production of good gas, nor prevent the burning of some gas above the coal bed. The Ponsard producer, on the Continent, and in some experimental practice here, promises well. It dispenses with the grate, promotes uniformity of combustion, and furnishes gas to the furnace at a higher temperature. The gazogen of Mr. TESSIÉ DU MOTAY is said to be very successful abroad; fourteen are running at the works of M. DE WENDEL in Lorraine. The same producer is employed for the production of illuminating gas at the new works in Buffalo, Troy and New York. There are many other schemes for the improvement of gas generation, which I cannot even refer to within the limits of this paper. It thus seems probable that a considerable economy will be shortly added to the gas furnace through the improvement of the producer.

There are cases in which the replacement of old furnaces by regenerative gas furnaces may not be the most economical proceeding, as in works situated but a few feet above water, and requiring costly tanks for the whole producer department, as well as for the regenerators, or else the raising of the whole floor and machinery. But it by no means follows that the old furnaces should be left as they are, in any works, whatever its circumstances. Among the various improvements which may be added to existing furnaces, or at least applied without the entire re movalof the old plants, are those of Mr. SWEET, of Syracuse, N. Y., and of Mr. PRICE, of Sunderland, England. Mr. SWEET, has already described his furnace and its working in a paper before the Institute. It is certainly doing well at his own establishment. The furnace of Mr. PRICE and its results have been made the subject of a recent paper before the Iron and Steel Institute, by Mr. LOWTHIAN BELL, with which our members are doubtless familiar. I will not, therefore, occupy your time with their discussion, but will very briefly state the facts about the Price furnace. Solid fuel is burned on a grate, but it is heated (its gases being thus partially distilled), and the air for combustion is also heated by the waste heat, before it enters the chimney. The inflow of the gas thus produced, and of solid carbon, to the grate, and of air under the grate, isthus uniform and at high temperature, so that combustion is uniform and comparatively complete. It is thus, in some sense, a regenerative furnace. The saving of fuel is about one-third in puddling, and one-half in reheating iron, as compared with the ordinary furnace; but the cost of steam coal, otherwise completely or partially saved by means of boilers over the common furnace, must be deducted from the above-mentioned economy. In respect of fuel, the Price furnace would seem to be nearly the equal of the gas furnace, but it cannot compete with the latter in intensity of temperature. Mr. BELL states that the character of the flame may be controlled, and that a reducing flame be maintained. There must, therefore, be an important saving in oxidation. The pulverized-fuel puddling furnace of Mr. CRAMPTON may also be mentioned. There is no doubt as to the excellent working and economy of this furnace in respect of fuel. Mr. CRAMPTON tells me, however, that his experiments do not, so far, warrant the belief that he can apply pulverized fuel successfully to furnaces which do not have a readily renewable oxide lining. The particles of coal blown into the furnace cut and flux brick fire-chambers.

An adequate discussion of so vast a subject as metallurgical furnaces could hardly be mapped out within the limits of a single paper. My object has been simply to draw the attention of iron and steel makers to the great waste in fuel, and the enormous waste in metals, which are constantly going on in most of our works—losses which draw a respectable dividend every year from the profits, and which may be prevented by thoroughly developed improvements. In view of such serious defects, and such ample and adequate remedies, it seems hardly worth while for our manufacturers to putter with trivial contrivances to add a little heat to the blast, and to check a little smoke, and to save a little fuel, and so eke out the wasteful life of a furnace system which is radically bad.

TO BE CONTINUED.

The Pittsburgh Puddlers' Strike.—At a meeting of the manufacturers and puddlers, the proposition of the owners to pay $4 75 per ton for puddling was rejected by the puddlers. An agreement was made that the manufacturers pay $5 per ton for the next thirty days; after that time the price to be regulated by that paid by Eastern manufacturers. The manufacturers claim that Eastern puddlers receive but $4.50 per ton, while the workmen state that they receive $5 per ton. During the thirty days the mills will be run at this compromise price and the matter of Eastern prices investigated.

American Institute of Mining Engineers.

OCTOBER MEETING, HELD AT CLEVELAND, OHIO.

THE sessions of the Institute were opened on Tuesday evening, October 26th, at Garrett's Hall.

Mr. CHAS. A. OTIS, Chairman of the Local Committee of Arrangements, welcomed the Institute to Cleveland, and introduced Col. CHAS. WHITTLESEY, who addressed the Institute briefly on the coal deposits of Ohio.

Col. WHITTLESEY described the situation and character of the coal beds of the State, and gave a short history of the use of raw coal in the manufacture of pig iron, and spoke of the excellent quality of metal produced. The aid that a body of scientific miners and metallurgists were capable of giving in the development of coal and other mineral resources, was dwelt upon, and the hope expressed that the visit of the Institute to Cleveland might be profitable as well to its members as to the citizens of the State.

The President, Mr. A. L. HOLLEY, responded to the welcome of Mr. OTIS and of Col. WHITTLESEY, and read an introductory address on Some Pressing Needs in the Iron and Steel Manufacture, which is published elsewhere in this issue.

The following members and associates were then elected :

(The members, etc., elected at all the sessions of the meeting are here included.)

Members.

CHAS. H. VANNIET, Metallurgist, Succasunna, Morris County, N. J.
A. S. MCGRATH Chemist 2d Geol. Survey of Pennsylvania, Harrisburg, Pa.
GEORGE A. JENKINS, Bessemer Steel Mill, Bethlehem, Pa.
WM. D. MARKS, Mechanical and Mining Engineer, Chattanooga, Tenn.
WM. C. STEVENS, Bessemer Steel Mill, Bethlehem, Pa.
JAMES R. WERTH, Supt. Clover Hill Coal Co., Clover Hill, Va.
WM. WEBSTER, 1,426 Spruce street, Philadelphia, Pa.
JAMES E. CLAYTON, Supt. Ore KNOB Copper Works, Ore Knob, Asche Co., N. C.
DAVID M. JOHNSON, Supt. of Mines, Broad Top City, Huntingdon Co., Pa.
ALFRED F. BERTOLET, Asst. Manager Himrod Furnaces, Youngstown, Ohio.
CHARLES HIMROD, Manager Himrod Furnaces, Youngstown, Ohio..
JOHN BIRKINBINE, Blast Furnace Engineer, 152 S. Fourth street, Philadelphia.
EUGENE A. BORDA, Coal Operator and Merchant, 326 Walnut street, Philadelphia.
JOHN MCLEAVY, Mine Manager, Dunbar, Pa.
J. RAMON DE YBARROLA, Civil Engineer, Bethlehem, Pa.
E. C. GARLIC, Furnace Manager, Indianapolis, Ind.
CHAS. PARKIN, of Messrs. MILLER, BARR & PARKIN, Pittsburgh, Pa.
JAMES HEMPHILL, of Messrs. MACKINTOSH, HEMPHILL & Co., Pittsburgh, Pa.
ANDREW A. BLAIR, Chemist to U. S. Test Commission, Watertown Arsenal, Maryland.
DR. A. WENDEL, Chemist to Albany & Rensellaer Iron and Steel Co., Troy, N. Y.
J. H. CREMER, Manager N. Chicago Rolling Mill Co.'s Blast Furnaces, Chicago, Ill.
OGDEN BOLTON, of Messrs. BOLTON & MEYER, Canton, Ohio.
HENRY HARLEY, Prest. Pipe Line Co., Parker City, Pa.
W. H. CLARKE, Mining Engineer, Millerstown, Pa.
W. W. SCRANTON, Gen'l. Manager Lackawanna Iron and Coal Co, Scranton, Pa.
JOHN E. FRY, Sup't. Steel Works, Cambria Iron Co , Johnstown, Pa.
HENRY BINNSE, Ass't. Engineer, N. Chicago Rolling Mill Co., Chicago, Ill.
O. W. POTTER, Pres't. N. Chicago Rolling Mill Co., Chicago, Ill.
F. A. EMMERTON, Chemist Joliet Iron and Steel Co., Joliet, Ill.
JOHN W. LANGLEY, Prof. of Chemistry, University of Michigan, Ann Arbor, Mich.
CHAS. RIDGELY, Pres't. Springfield Iron Co., Springfield, Ill.
J. J. HAGERMAN, Pres't. Milwaukie Iron Co. Milwaukie, Wis.
J. T. POTTS of Messrs. RICHMOND & POTTS, 119 S. 4th St., Philadelphia.
WM. METCALF, of Messrs. MILLER, BARR & PARKIN, Pittsburgh, Pa.
JAS. E. WALKER, Gen'l. Manager Albany and Rensellaer Iron & Steel Co., Troy, N. Y.
D. J. MORRELL, Gen'l. Manager Cambria Iron Co., Johnstown, Pa.
JAMES MORRE, Engineer, Philadelphia, Pa.
WM SELLERS, 1600 Hamilton St. Philadelphia.
CHAS. MACDONALD, Engineer, 86 Broadway, New York.
WM. P. SHINN, Gen'l. Manager Edgar Thompson Steel Co., Pittsburgh, Pa.
ASHBEL WELCH, Engineer, Lambertville, N. J.
Prof. HENRY WURTZ, Hoboken, N. J.
REUBEN MILLER, of Messrs. MILLER, BARR & PARKIN, Pittsburgh, Pa.
ALFRED L. TYLER, Pres't. Woodstock Iron Co., Anniston, Ala.
HENRY CHISHOLM, V. P. Cleveland Rolling Mill Company, Cleveland, Ohio.
WM. R. JONES, General Superintendent Edgar Thomson Steel Works, Pittsburgh, Pa.
CHAS. KENNEDY, Superintendent Cleveland Iron Company, Cleveland, O.
Prof. R. H. THURSTON, Stevens Institute, Hoboken, N. J.
DAVID SMITH, Chief Engineer U. S. Navy, U. S. Test Commission, Navy Department, Washington, D. C.
H. S. SMITH, General Superintendent Joliet Iron and Steel Co., Joliet, Ill.
General Q. A. GILLMORE, U. S. Test Commission, Army Building, New York City.
J. F. HOLLOWAY, Supt. Cayahogue Works, Cleveland, Ohio.
C. F. BRUSH, Cleveland, Ohio.
D. E. GARRISON, V. P. Vulcan Iron Co., St. Louis, Mo.
D. N. JONES, Sup't. Machinery Cambria Iron Works Johnstown, Pa.
CHAS. A. OTIS, President Otis Iron and Steel Co., Cleveland, Ohio.
RUFUS H. EMERSON, Pittsburgh, Pa.
S. A. FORD, Chemist to Works of JOHN GILL, Jr., Pittsburgh, Pa.
JAMES CARTWRIGHT, of Messrs. CARTWRIGHT, MCCURDY & Co., Manufacturers of Hoop and Bar Iron, Youngstown, Ohio.
LLOYD BOOTH, Machinist and Master Mechanic, Youngstown, Ohio.
WM. B. POLLOCK, Furnace Builder and Engineer, Youngstown, Ohio.
SAMUEL W. CROXTON, Furnace Manager, Canal Dover, Ohio.
HOMER HAMILTON, Machinist, Youngstown, Ohio.
JAMES M. RENO, Mining Engineer, Youngstown, Ohio.
THOS. W. YARDLEY, Water Works Engineer, Cincinnati, Ohio.
P. L. WEIMER, Mechanical Engineer, Lebanon, Pa.
JAMES J. FRONHEISER, Chemist, Johnstown, Pa.
H. J. DETWILLER, Chemist, Bethlehem, Pa.
WM. G. PLATT, Geologist, 139 South 5th street, Philadelphia, Pa.
P. H. DUDLEY, Civil Engineer, Cleveland, Ohio.
WILSON CHISHOLM, Sup't. Steel Works, Newburgh, Cleveland, Ohio.
JOHN C. PARKES, Gen'l. Sup't. North Chicago Rolling Mill Co., Chicago, Ill.
S. M. CARPENTER, Founder, Cleveland, Ohio.
A. B. STONE, Prest. Cleveland Rolling Mill Co., Cleveland, Ohio.
ALEX. E. BROWN, Engineer, 306 Euclid Avenue, Cleveland, Ohio.
N. P. BOWLER, of Messrs. BOWLER, MAYER & BRAYTON, Cleveland, Ohio.
Col. CHAS. WHITTLESEY, Cleveland, Ohio.

Associates.

SYLVANUS ALBERT REED, School of Mines, New York City.
EDWARD BILER, " " " " "
WM. WHITE HANCE, " " " " "
ANTHON THATCHER, " " " " "
WALTER EDWARDS HILDRETH, " " " " "
HORACE H. WEEKS, " " " " "
FREDERICK REMSEN HUTTON, " " " " "
WM. HENRY SMEATON, " " " " "
FRANK STUART HELLEBERG, " " " " "
CHARLES L. CONSTANT, " " " " "
JAMES R. PRIEST, " " " " "
FRANCIS NEWBERRY HOLBROOK, " " " " "
HERBERT C. FOOTE, School of Mines, New York City.
WILLIAM KELLY, " " " " "
GEORGE BIRDSALL CORNELL, " " " " "
A. B. MEEKER Chicago, Ill.
M. A. HANNA, Cleveland, Ohio.
S. C. BALDWIN Cleveland R. M. Co., Cleveland, Ohio.
S. A. FULLER, Cleveland Iron Co., Cleveland, Ohio.
C. E. BINGHAM, Cleveland, Ohio.
WILLIAM B. DAVOCK, Cleveland, Ohio.
HENRY MANNING, Furnace Manager, Youngstown, Ohio.
HENRY O. BONNELL, Iron Manufacturer, of BROWN, BONNELL & Co., Youngstown, O.
JOHN STAMBAUGH, Pig Iron Manufacturer, Briar Hill Iron and Coal Company, Youngstown, Ohio.
CALEB B. WICK, Manufacturer of Iron Rails, Youngstown, Ohio.

Foreign members.

JULIEN DEBY, Editeur du *Moniteur des Interets Matériels*, 6 Rue Neuve St. Gudule, Brussels, Belgium.
N. RESIMONT, Ingenieur aux Aciéries de la Société JOHN COCKERILL, Seraing, Belgium.

DR. R. W. RAYMOND, in the absence of the Chairman of the Centennial Committee of the Institute, presented verbally the report of the Committee. Mr. ECKLEY B. COXE had been elected Chairman, and Mr. J. S. ALEXANDER, Secretary. The Committee had issued the following circular to members and associates: [The circular was published in the ENGINEERING AND MINING JOURNAL of September 4.]

CENTENNIAL COMMITTEE OF THE
AMERICAN INSTITUTE OF MINING ENGINEERS,
206 South Fourth Street.
PHILADELPHIA, July 5, 1875.

DEAR SIR: The undersigned, appointed by vote of the Institute a Committee to make arrangements for the convenience of members and associates, and of foreign visitors, who may attend the Centennial Exposition, have decided provisionally upon the following plan, additions or amendments to which you are respectfully invited to suggest. The object of the Committee has been to devise a simple, practicable, and useful programme, neither ostentatious nor likely to intrude upon ground occupied by other societies, and at the same time capable of such expansion as circumstances may indicate and means permit.

1. The Committee will ask of the Institute, at the next (October) meeting, a vote authorizing the adjournment of the annual meeting of May, 1876, to the third Tuesday of June, the adjourned session to be held in Philadelphia.

2. The Committee will endeavor, by special invitation, to secure the attendance, at the Philadelphia meeting, of English and Continental mining engineers and metallurgists, and, if practicable, to give to the meeting an international character.

3. The Committee proposes to engage suitable rooms in Philadelphia for the period of the Exposition, to furnish them with technical periodicals, and books of reference concerning the resources and industries of the United States, to secure the attendance of a competent secretary, and to keep these rooms open, day and evening, as the Centennial Headquarters of the American Institute of Mining Engineers. The practical object of this measure will be to afford to members and associates a place for social reunion, for writing and receiving letters, and for obtaining desired information or introductions. Foreign visitors interested in mining or metallurgy would, on making themselves known to the Committee, receive cards entitling them to the privileges of the rooms, and particularly to the services of the secretary in charge, who would be able to assist them in any line of inquiry which they might wish to pursue, giving them statistics, general information, directions, advice, and letters of introduction to all parts of the country. The same cards would enable them to take part in the proceedings or excursions of the Institute. The addresses and prospective movements of the members or visitors could be posted in books kept for the purpose; and letters could be forwarded to them regularly, or friends advised of their whereabouts.

The Committee has received assurances of co-operation in various respects, tending to add still more to the pleasures and facilities which may be gathered around this idea But the object of the present circular is to sketch briefly the outline of what is proposed as a minimum. You will perceive that the only necessary part of the plan involving extra expense is the maintenance of the Centennial Headquarters.

The Committee estimates that the sum of $5,000 will be ample for the purposes of rent, furnishing, lighting, stationary, care of rooms, and salary of attendant secretary. This sum it is proposed to raise by a voluntary subscription; and you are respectfully requested, if the plan meets your approval, to notify Mr. J. S. ALEXANDER, at the above address (which is the temporary office of the Committee), of the amount which you are willing to subscribe. The names and amounts will not be made public; there is no obligation on your part to subscribe, other than such as your free wish to co-operate for this object may impose upon you, within the limit of your convenience. It may be added, to show the range of subscriptions thus far, that there have been received already from members and associates a number of subscriptions of $100 each, and others of smaller sums, down to $10. The subscriptions will be payable on or before January 1, 1876, provided a sufficient amount shall have been pledged to warrant the Committee in going forward. But you are earnestly requested to inform the Committee at once of your purpose in the matter, since there is a very large foreign correspondence to be carried on, if this plan is to be made practically profitable to the profession. Awaiting your early reply, we are

Yours very truly,

ECKLEY B. COXE, J. S. ALEXANDER,
THOS. EGLESTON, R. W. RAYMOND, } *Committee.*

In response to this circular, 82 out of 403 members and associates had responded with subscriptions amounting thus far to $2,470. The Committee had taken rooms at 1,123 Girard street, Philadelphia, and its arrangements for the Centennial were progressing. For the present, the provisional office, at 206 South Fourth street, Philadelphia, would be retained for use, the Centennial Headquarters being engaged from April to December. Dr. RAYMOND explained at length some of the plans proposed by the Committee for the profit and convenience of members and guests of the Institute during the exposition. The following resolution was passed at the request of the Centennial Committee :

Resolved, That after the annual election of officers, and without the transaction of other business, or the reading of papers, the May meeting of 1876 shall be adjourned to the third Thursday of June, or such later day as the Council may determine, the adjourned session to be held at Philadelphia.

Mr. E. C. PECHIN then read a paper on Blast Furnace Hearths and In-walls, which was actively discussed. After announcement by Pres. HOLLEY of the programme arranged by the Local Committee for the excursions and entertainments of the meeting, the session was adjourned.

SECOND SESSION.

The Institute assembled in the room of the Common Council at half-past nine o'clock, A. M.

After the election of members the following papers were read :

Memoranda relating to two ninety-feet Chimneys for Siemens' Heating Furnaces at the Edgar Thomson Steel Works, by PHINEAS BARNES, of Pittsburgh.

Bessemer Converter Bottoms, by ROBERT FORSYTH, of the N. Chicago Rolling Mill.

Improved Bessemer Plants, by JOHN B. PEARSE, of Philadelphia.

Deceptive Coal Seams near the Limestone or in the Silurian Rocks of Virginia, by MARTIN CORYELL, of Richmond, Va.

On the Discovery of the Vespertine Coal Beds in the Rock of Sideling Hill, Huntingdon County, Pa., by CHAS. A. ASHBURNER, Second Geological Survey of Pennsylvania.

The Mass Copper of Lake Superior and the Method of Mining it, by Prof. W. P. BLAKE, of New Haven, Conn.

On the Shrinking of Pig Iron, by M. A. B. CORNELL, of Youngstown, Ohio.

Before adjournment Prof. EGLESTON offered the following resolution :

Resolved, That a committee be appointed to consider that part of the President's address which relates to the appointment of a Commission to examine refractory materials.

Which was carried.

A resolution was also passed, requesting the President to appoint the Committee to include himself.

President HOLLEY appointed Professors EGLESTON and BLAKE.

THIRD SESSION.

The third session was held on Wednesday evening, at 8 o'clock, in the Common Council Chamber.

The discussion of Mr. CORNELL's paper on the Shrinkage of Cast Iron, was resumed and concluded.

Mr. R. W. RAYMOND offered, on behalf of the Centennial Committee, a resolution with reference to the meeting of May, 1876, to be embodied, with permission of the meeting, in the report of the committee of a previous session.

Prof. BLAKE, in seconding the resolution, remarked that the Centennial Commission, in carrying out the instructions of Congress, designed the erection of a large building in the exhibition grounds for the use of the International Jury. This building would contain rooms which could be obtained for the use of scientific societies to hold meetings, and he felt authorized to extend to the Institute an invitation to hold its annual meeting of 1876 there. It was important that the time of this meeting should be fixed as soon as possible, that accommodations in this building might be secured. Prof. BLAKE desired to suggest, further, to the Centennial Committee the propriety of the erection of a small and inexpensive building in the exhibition grounds, where foreign engineers could apply for information concerning the mines, metallurgical works, etc., of the country. There should also be prepared a short pamphlet, containing the history and progress of the Institute, to constitute, together with published transactions, the Institute's exhibit. Prof. BLAKE thought that the presence of the government collection of mineral products, including a department of publications, maps, models, etc., relating to mining and metallurgy, in the exhibition, would be a center of attraction to foreigners, and would make a headquarters of the Institute in the exhibition highly desirable. Prof. BLAKE did not wish to be understood as opposing the arrangements of the Centennial Committee in providing rooms in the city, but thought that visitors to the exhibition would be more likely to seek for information inside than outside the grounds. He further suggested that members should correspond with the Centennial Committee, and express their views on the subject.

Dr. RAYMOND said that the Committee had already been aided in their work by suggestions from members, and would be gratified to hear from as many members as possible, regarding the arrangements for the Centennial.

The papers read at this session were :

On Furnace Hearths, by GEO. ASMUS, of New York.

Mr. ASMUS also exhibited specimens of "mineral wool," produced by the action of a jet of steam on blast-furnace slag. Mr. ASMUS said that attempts were making in Austria to anneal this product, so that the fibres could be worked into fabrics.

The Effects of Heat on Steel, by WM. METCALF, of Pittsburgh.

Iron and Carbon Mechanically and Chemically Considered, by J. B. PEARSE, of Philadelphia.

The Mahoning Valley Coal Region, by ANDREW ROY, of Columbus, Ohio.

FOURTH SESSION.

The Institute assembled at eight o'clock, on Friday evening, in the Common Council Chamber.

After the election of members,

Dr. R. W. RAYMOND offered the following resolution, which was unanimously carried:

Resolved, That the thanks of the American Institute of Mining Engineers be conveyed to the CLEVELAND UNION CLUB, the STANDARD OIL COMPANY, Mr. J. F. HOLLOWAY, the OTIS IRON AND STEEL COMPANY, the CLEVELAND ROLLING MILL COMPANY, the UNION STEEL SCREW COMPANY, the ATLANTIC AND GREAT WESTERN, CLEVELAND AND PITTSBURGH, and CLEVELAND, TUSCARAWAS VALLEY AND WHEELING RAILWAY COMPANIES, and the Press of Cleveland, for the courtesies they have freely extended to the Institute; to Messrs. M. D. LEGGETT & Co., for the offer of their rooms to members; to Col. CHAS. WHITTLESEY, for his cordial and interesting welcoming address; and to Messrs. J. S. NEWBERRY, C. A. OTIS, FAYETTE BROWN, S. A. FULLER, W. C. ANDREWS, and M. A. HANNA, the efficient Local Committee, for their unwearied efforts and admirable arrangements to promote the comfort of members, and the profit and pleasure of this meeting.

Prof. T. EGLESTON said that the Committee appointed to consider that part of the President's address relating to refractory materials had held several meetings, and begged to report that, in view of the important results of similar commissions appointed by the Governments of France and Germany, in the early part of the present century, when metallurgical processes required, as now, a much better refractory material, the Institute is justified in seriously considering the question of the appointment of such a commission, and the Committee beg to present the following resolutions :

Resolved, That the suggestion made in the President's address regarding the appointment of a Commission to examine refractory materials, is most heartily approved by the Institute;

Resolved, That a Committee of five, of which the President shall be one, be appointed to endeavor to engage the interest of manufacturers in this subject, and to prepare a report of what such a commission may be expected to accomplish, to be presented to the next meeting of the Institute, and that the Committee may have power to add to their numbers.

The President, subsequently, appointed Messrs. T. EGLESTON, W. P. BLAKE, A. B. STONE, and T. M. DROWN.

Prof. EGLESTON offered, further, the following resolutions :

Resolved, That the American Institute of Mining Engineers consider the appointment of the United States Board for Testing Iron, Steel and other Metals, as one of the most important steps in the interest of engineering science ever undertaken by the United States Government;

Resolved, That the Institute tender its earnest sympathy to the Board in the work it has undertaken, and

Resolved, That a Committee of three be appointed, with power to add to their numbers, to co-operate with the United States Board.

President HOLLEY appointed Messrs. T. EGLESTON, WM. SELLERS and WM. METCALF.

Dr. R. W. RAYMOND exhibited specimens of the rock from the Calumet and Hecla mine, Lake Superior, and from the Nonesuch, a new mine, in Ontonagon County. The former was conglomerate, the latter sandstone, containing disseminated native copper. The Nonesuch vein or bed is about 8 feet wide at the depth of 190 feet attained by the mine, and a zone of 4 feet in it carries fine copper—about 4 per cent. The Calumet rock now yields 5 per cent.

The papers read at this session were :

Comparison of Blast Furnace Results, by FRANK FIRMSTONE, Glendon Iron Works, Easton, Pa.

Comparison of Results from Open-Topped and Closed-Topped Furnaces, by FRANK FIRMSTONE.

On the World's Production of Silver, by R. W. RAYMOND, of New York.

On the Substitution of Liquid Vaporized and Gaseous Hydrocarbons for Solid Fuel in Blast Furnaces, by C. PLAGGE.

On the Coking of Indiana Block Coal, by J. S. ALEXANDER, of Philadelphia.

On Evidence of Streams during the Deposition of Coal, by JOHN F. BLANDY, of New Bethlehem, Pa.

What is Steel? By A. L. HOLLEY, of New York.

On a Formula for Carbon Duty in Blast Furnaces, by JOHN M. HARTMAN, of Philadelphia.

The following papers were read by title, after which the meeting adjourned :

On Coddling Workmen, by Dr. R. W. RAYMOND.

On the Martin Steel Process, by Dr. R. W. RAYMOND.

Note on the Occurrence of Siderite at Gay's Head, Martha's Vineyard, by Prof. W. P. BLAKE.

On the Mines of the Comstock Lode and the Method of Working them, by DAVID COGHLAN.

On the Velocity of Gases in Blast Furnaces, by J. A. CHURCH.

On the Compression of Gases, by C. F. BRUSH.

EXCURSIONS.

The following excursions to places of interest, in and around Cleveland, were arranged by the Local Committee, with the co-operation and support of the citizens of Cleveland and the officers of the different railroads :

On Wednesday afternoon the members were taken in carriages to the Water Works, the Standard Oil Works, and the Ore Docks in Cleveland. On Thursday morning, at 8 o'clock, a special train, on the Cleveland and Pittsburgh Railroad, left the Union Depot for the Otis Iron and Steel Works, the Union Steel Screw Works, and the Mills and Bessemer Works of the Cleveland Rolling Mill Co., at Newburgh. In the afternoon, the members were entertained by the Cleveland Union Club at dinner, and visited the new Opera House in the evening. Friday morning, at 8 o'clock, a special train left the Atlantic and Great Western Depot for Youngstown and vicinity, stopping *en route* at Leavittsburg, to see the apparatus for shifting car trucks from broad to narrow gauge, and *vice versa*. At Youngstown, the Hoop-iron Rolling Mill of Messrs. CARTWRIGHT, MCCURDY & Co. was visited. The party, here largely reinforced in numbers, were then taken to the Church Hill Bank and the Holliday's Bank (Block coal), to Hubbard's Furnace, the Rail Mill of Messrs. WICK, RIDGWAY & Co., and, finally, to Himrod's Furnace, returning to Cleveland at 6:30 P. M. Saturday morning, a special train left on the Cleveland, Tuscarawas Valley and Wheeling Railroad. The Mountain Bank of the Roach Coal Company was first visited, whence the party proceeded through Massillon to Port Washington, to see the "Scotch" Furnaces and the Black Band Ore Mines. At Port Washington, the members going East took the Pan Handle train, the remainder returning to Cleveland.

Notes.

The Manager of the Bridgeport Coal Mines at Port Caledonia, C. B, announces the discovery of a new seam of coal eight feet thick.

Use of Peat as Fuel.—The Lake Superior Mining Company are using peat as fuel at their several engine houses around the mines.—Marquette (Mich.) *Mining Journal.*

When a Citizen of Rochester is blown into the dreamy hereafter by a kerosene lamp explosion the gas company officials grimly remark: "Comes o' fighting agin honest monopoly."

Miners Put on Three-quarter Time.—This morning the Delaware & Hudson Company puts its collieries on three-quarter time. A notice to that effect was up at Pine Ridge. The Lehigh & Wilkes-Barre Company is working nine hours.—Wilkes-Barre *Record of the Times* of Nov. 1.

The Lehigh Valley Railroad Company has engineers upon the line from Fairview to the Lackawanna, running down back of the Wilkes-Barre mountains. This line will shorten the through route considerably and put the company's coal on top of the mountain at less cost per ton.

Armour-Plate Machinery for the Chinese Government.—Messrs. SHANKS and Co., of Johnstone, England, have received orders to construct two machines for the manipulation of armour plates for the Chinese Government, one of which was despatched to London last week for shipment.

The Iron and Steel Works of the Canada Steel Company, at Londonderry, are rapidly approaching completion, and the projectors are certainly expending a large amount of capital on the enterprise, which we hope will prove successful when production begins.—*Toronto Monetary Times.*

Lectures on Railway Engineering.—The Vienna railway companies subscribe among them £600 yearly for the endowment of a course of lectures at the Academy upon railway construction and management. The lectures are well-attended, the students being for the most part "those of "riper years." At the end of the course, they are subjected to a stiff examination conducted by some of the chief railway authorities.

The Moisic Iron Company, of the Lower St. Lawrence, is in difficulties. This company was organized eight or ten years ago through the enterprise of W. M. MOLSON, who believed, and finally demonstrated, that the magnetic sands found in that locality were available for making an excellent quality of malleable iron. A company was formed in 1869 with a capital of $600,000, of which over half is stated to have been paid up. Furnaces were built at the river for making "blooms," and works put up in Montreal for rolling and finishing car axles, shafts, and other heavy iron goods, which, until quite recently, have given employment to some 140 men. The return, however, from the operations of the Company, seems to have been inadequate; it was badly "locked up" and of late had been frequently pressed for payment of bills, and, it is said, had not paid its men for weeks. Mr. MOLSON who, with a Mr. HAMILTON, of Syracuse, is the heaviest holder of stock, has suspended payment, and a writ has been issued by a Syracuse creditor, with the object of forcing the concern into insolvency; but this is resisted, and a delay of ten days is necessary under the law. Mr. MOLSON, we understand, once before bought the Company's effects in at sheriff's sale. He may have to do something like this again, unless he can succeed in imbuing some other capitalists with his own faith in the ultimate success of his industry.—Toronto *Monetary Times.*

Third Annual Meeting of the American Gas-Light Association.

HELD AT MASONIC TEMPLE, NEW YORK, OCTOBER 20TH, 1875.

At 10 A. M., the Association was called to order by the President, General CHARLES ROOME, who, on taking the chair, said: I must make the same apology to you that I did before, that it has not been in my power to prepare an address such as would be proper to submit to you.

During the past summer I was in very poor health, unable to attend to business of any kind, and was obliged to be absent. Since my return, which has only been for a few weeks, I have been so completely absorbed in matters of business connected with my own company, and my health has been so extremely feeble, that it was with the utmost difficulty I attended to those duties which were required of me; but still, I bid you heartily welcome here.

We are now assembled for the purpose of deliberating again on matters connected with the interests of the profession in which we are engaged.

It is unnecessary for me to remind you of the obligations you are under to those whose interests you represent, and to the public at large.

This is an interest embracing the whole country. We meet here from Canada to Florida, from Maine to California. We are here for the purpose of duly deliberating, and carefully considering, matters which may be presented to us, which are calculated to advance the welfare and usefulness of those institutions over which we preside, and which we represent. Therefore, let us take these matters calmy, considerately, deliberately.

We are not here to advance the interests of any one man, or any one company; but we are here to tell each to the other what we know of the business in which we are engaged, which is calculated to advance the general good, and promote harmony between the manufacturer and consumer.

There is nothing in our business, with which I am acquainted, after an experience of forty years, that we need make a secret of, which all the world may not know. Startling discoveries are not to be expected. Little by little do we advance, and advancing little by little, we make sure progress.

Therefore should we be calm and self-possessed, and give a due measure of consideration to improvements, or supposed improvements, calling upon each man who rises here to give a reason for that which he asserts, and considering those reasons in the light of truth and conscience. For our business is a business of truth and conscience. If, then, we consider it in that light, our annual gathering will be most valuable to us and to those we represent. Leaving, therefore, the matter in your hands, we will at once proceed to business.

The following members were present:

W. W. GOODWIN, Phila., Pa.		CHAS. W. ISBELL,	New York City.
W. W. BEGGS, San Francisco, Cal.		JNO. BALMORE,	"
HENRY CARTWRIGHT, Phila., Pa.		EDWIN LUDLAM,	Brooklyn, N. Y.
L. C. HANFORD, Norwalk, Conn.		T. F. ROWLAND,	"
F. E. HARRISON, New Haven, Conn.		J. W. BEATLEY,	"
JNO. P. HARBISON, Hartford, Conn.		W. H. BRADLEY,	"
C. A. GERDENIER, Bridgeport, Conn.		I. N. STANLEY,	"
T. E LITTLEHALES Hamilton, Canada.		W. HENRY WHITE,	"
J. W. GATES, " "		C. WHITE,	"
THOS. CURLEY, Wilmington, Del.		JAMES HOW,	"
E. BETTS, " "		A. C. WOOD, Syracuse,	New York.
H. STACEY, Indianapolis, Ind.		O. G. STEELE, Buffalo,	"
WM. DUNBAR, New Albany, Ind.		WM. CARTWRIGHT, Oswego,	"
J. LAWRENCE SMITH, Louisville, Ky.		G. T. SUTTON, Peekskill,	"
E. M. BREESE, Detroit, Mich.		T. C. CORNELL, Yonkers,	"
H. H. EDGERTON, N. Y. City.		W. R. BEAL, Mott Haven,	"
J. H. ROLLINS, Worcester,	Mass.	H. A. BROOKE, Albany,	"
—— SHERMAN, "	"	J. S CHAMBERS, Trenton,	New Jersey.
GEO. D. CABOT, Lawrence,	"	W. L. WILLIAMS, Paterson,	"
H. F. COGGSHALL, Fitchburg,	"	T. C. BATES, Hoboken,	"
GEORGE B. NEAL, Charlestown,	"	N. B. CRENSHAW, Millville,	"
GEORGE DWIGHT, Springfield,	"	MARCUS SMITH, Wilkes-Barre,	Penn.
O. E. CUSHING, Lowell,	"	W. H. DENNISTON, Pittsburgh,	"
L. D. RHODES, Holyoke,	"	WM. GARDNER, "	"
F. H. ODIORNE, Boston,	"	P. MUNZINGER, Philadelphia,	"
T. J. PISHOU, Roxbury,	"	J. DESHA PATTON, Trevorton,	"
L. P. GEROULD, Newton,	"	GEO. K. REED, Lancaster,	"
ISAAC R. SCOTT, Waltham,	"	W. H. PRICE, Cleveland,	Ohio.
Gen. CHAS. ROOME,	New York City.	W. H. MILLER, Columbus,	"
J. R. FLOYD,	"	A. B. SLATER, Providence,	R. I.
O. ZOLLIKOFFER,	"	SAMUEL G. STINESS, Pawtucket,	"
I. HERZOG,	"	WM. H. BAXTER, Petersburgh,	Virginia.
H. P. ALLEN,	"	J. A. THOMPSON, Norfolk,	"
CHAS. NETTLETON,	"	W. N. TILLINGHAST, Fayetteville,	N C.
GEO. OLNEY,	"	THOS. TURNER, Charleston,	S. C.
J. ELLIOT CONDICT,	"	SAMUEL PRICHITT, Nashville,	Tenn.

The following is a corrected list of the new members elected:

A. C. HUMPHREYS, Bergen Point, N J.	WM. HUMPHREYS, Waterford, N. Y.
J. H. SMITH, Newark, Ohio.	F. J. DAVIS, Waltham, Mass.
A. L. ALLEN, Poughkeepsie, N. Y.	W. E. WAITE, Brattleboro, Vt.
C. F. SMITH, Marlboro, Mass.	D. H. CRAFTS, Northampton, Mass.
CHARLES COLLIER, Selma, Alabama.	GIDEON WOOD, New Bedford, Mass.
GEORGE BUIST, Halifax, Nova Scotia.	WM. B. DURFEE, Fall River, Mass.
JAMES SOMERVILLE, Knoxville, Tenn.	JAMES SLINGLUFF, Norristown, Pa.
LEWIS MOSS, Sandusky, Ohio.	D. H. FOX, Reading, Pa.
EDWARD L. WOOD, Lewiston, Maine.	ROBERT YOUNG, Alleghany City, Pa.
RICHARD J. MONKS, Boston, Mass.	GEO. W. EDGE, Jersey City, N. J.
EDWARD JONES, Boston Mass.	JUSTUS DITMAR, Williamsport, Pa.
JOHN M. NEWELL, New Brunswick, N. J.	JOHN CARTWRIGHT, Poughkeepsie, N. Y.
WM. FISKE WARNER, Waverly, N. Y.	JAMES M. STARR, Richmond, Ind.
J. LINTON, Ravenna, Ohio.	W. H. PEARSON, Toronto, Ontario.
S. L. WILEY, Greenfield, Mass.	FRED. S. BENSON, Brooklyn, N. Y.
WM. D. CADWELL, Nashua, N. H.	F. C. SHERMAN, New Haven, Conn.
CHARLES H. NETTLETON, Derby, Conn.	C. F. MAURICE, Sing Sing, N. Y.

A Member—Before the Association acts upon these applications, I would like to know if all these gentlemen are connected with the gas business. It appears that the same members vouch for several of them. Perhaps some of them may be farmers, or not directly connected with the gas business.

The Secretary—They are all employed by gas companies. At any rate, their applications are all properly endorsed by members of the Association, according to our constitution. There was one application made about which I felt some doubt, and I passed it. That is not on the list. In regard to the same members vouching for several applicants, I would state that at the hotel, last night, I told several of these gentlemen who wished to become members, to send their applications to me beforehand, and I thought I would get them all prepared, and vouched for in the regular way, before the Association met this morning, in order to save time. So I took the applications of gentlemen who were known to be connected with gas companies, to Mr. CARTWRIGHT and Mr. CHAMBERS for their endorsement. The names of the applicants thus handed them for their endorsement were those of gentlemen who were known to be gas men. For instance, one was a gas engineer; another was a gas superintendent, etc. All the applications are properly endorsed, in the regular way prescribed by our constitution and by-laws, and these gentlemen, by virtue of their connection with the gas business, are all entitled to become members of this Association.

The following report of the Executive Committee was then read:

To the Officers and Members of the American Gas-Light Association:

The duties of the Executive Committee for the past year have not been arduous, and there is but little to report. There are, however, one or two recommendations which your committee desire to make. In consequence of the adoption of the new constitution, we recommend that hereafter the Secretary be authorized to use only the names of individuals as members, in accordance with Article IV. of the new Constitution, and not the names of companies in their organized capacity. The question of salary for the Secretary and Treasurer (the two offices being represented by one individual) was considered. After a full examination of the financial affairs of the Association, we recommend that the sum of two hundred and fifty ($250.00) dollars be paid to CHARLES NETTLETON, Esq., for his services as Secretary and Treasurer for the past year.

Respectfully submitted,

W. H. DENNISTON, GEO. D. CARBOT, W. HENRY WHITE, HENRY CARTWRIGHT, H. STACEY, } Committee.

The report was accepted and adopted.

Mr. CHAMBERS, Chairman of the Finance Committee, made a verbal report. He said: "I have examined the accounts of the treasurer and find the same correct. I examined his accounts and vouchers according to the report which he presented, and I certify on that report that I find it correct."

Mr. NETTLETON presented the treasurer's report from the time the books and papers came into his possession. Gentlemen who attended the meeting in October last, will remember that Mr. DEMILL acted as treasurer on the first day of the session; at the close of the day he was obliged to go away and attend to other business, and at the close of the first day he handed over the papers and money to Mr. NETTLETON, whose account commenced at the opening of the second day. The treasurer then read his report, which was adopted.

The following resolutions with regard to the death of C. L. EVERETT, Esq., and C. C. MILES, Esq., of the New York Gas Company, were adopted by the Association:

Whereas Time, the destroyer, having stricken from off the roll of the living the name of CORNELIUS L. EVERETT, Esq., the late respected President of the New York Gas Light Company, it becomes at once our duty and sad pleasure to testify to our appreciation of his merits as an accomplished gentleman, an upright business man, and a careful and skilful gas engineer, therefore be it

Resolved, That the American Gas Light Association learns with profound regret of the death of CORNELIUS L. EVERETT, Esq., and while we cannot but view his taking off as his eternal gain and but a removal from earthly trials and sorrows to realms of peace; yet, as his fellow-workers, we cannot but lament the removal from our midst of so much that was venerated and useful in his daily walk and life.

Resolved, That his career of nearly fifty years in his profession has been such as to command the highest respect and esteem of his fellow-engineers; during which time he has seen it grow from the cruder workings of its early promoters to its present efficiency, and in all and through all he has been part of its growth and development.

Resolved, That this Association also sincerely regrets the recent death of Mr. C. C. MILES, late Secretary of the same company. In him we recognized all those traits that distinguished the earnest and conscientious business gentleman.

Therefore be it Resolved, That this Association do adjourn at one o'clock P. M., in order to give its members an opportunity to attend the funeral of Mr. C. L. EVERETT; that these resolutions be spread in full upon our minutes, and a copy to be sent to each of the families of the deceased, with our sincere and sympathetic regrets.

(Signed WM. HENRY WHITE. O. ZOLLIKOFFER. W. H. DENNISTON.

Then followed the report of the Committee on naphtha gas:

Mr. NEAL—"Mr. President: I suppose it is my duty, as a member of this committee, to make a report, and I must begin by an apology to this Association for coming before it with empty hands. I suppose that some of the members will be disappointed in not hearing anything from the naphtha committee, but I am sorry to say that that committee has no report to make. I greatly regret that this is the case, for I am deeply sensible of the honor the Association has conferred upon me and upon the gentlemen associated with me, in putting us upon so responsible and important a committee.

"We have investigated the subject as far as we could, but we come before the Association and apologize for not presenting a report, thank you for the honor you have conferred upon us, and ask most respectfully to be discharged from further duty.

"One great difficulty presented itself in the composition of the committee. It was composed of three members; myself, residing in Boston; Mr. HENRY CARTWRIGHT, residing in Philadelphia, over 300 miles off, and Mr. CLEGG of Dayton, residing I don't know how many miles off, probably five or six hundred. We have had no opportunity for consultation.

"We have conferred with each other somewhat by letter. I have had but one interview with Mr. CARTWRIGHT in regard to this subject, since the last annual meeting of the Association, except one I have had with him to-day. I have not seen Mr. CLEGG, the member of the committee from Dayton, Ohio, since the last annual meeting of the Association. I had some correspondence with him before the last semi-annual meeting. Since then I have written to him once and received a letter from him to this effect:

'I am so busy building and attending to other business, that I have no time to give to the subject, and I shall be unable to be present at the annual meeting in New York.'

"So you see that the committee have not had an opportunity for conference; and I would respectfully suggest that if another committee is appointed, it should be composed of members who reside near each other, say in the cities of New York and Philadelphia, where they can meet often and get each other's views. It is impossible for the members of the committee to discharge their duty properly when they are separated by such long distances, and cannot meet and confer with each other.

"If there is another committee appointed in our place, I think it would be better to have upon it at least one if not more persons who are engaged in the manufacture of naphtha gas. That was suggested at the last semi-annual meeting, but objections were raised, and I do not think those objections were well founded. Several persons engaged in the manufacture of gas from naphtha, and who are interested in the naphtha process, have stated that they thought there should have been added to the committee one or two naphtha gas men; and if only one had been appointed upon our committee, perhaps we might have had a report to make.

"We have received many communications from different parties interested in the manufacture of naphtha or petroleum gas, and we have been treated very kindly and courteously by them, and we are happy to say that we have found a great many gentlemen who are engaged in the manufacture of naphtha-gas—a great many *gentlemen*. It has been intimated that these parties who are interested in the naphtha process, go to members of committees or others and state to them that 'we have a process here which, unless you adopt it, will make trouble in your company.' This has not been so with us. We have been treated with courtesy, kindness and cordiality. In many instances we have been invited to visit the works, and have been assured that all our expenses would be paid; that there should be no expense whatever incurred by the members of the committee in visiting their works. I say this in deference and out of regard to the feeling of some of the members of this Association, who represent the naphtha gas interest.

"I would state for myself, personally, I did intend, after the semi-annual meeting, to take this matter into consideration, and spend a good deal of time in the investigation of it, as chairman of the committee, which it seemed to devolve upon me to do, but I regret to say that I was so much occupied I could not get the time, that, in my opinion, was necessary to the investigation of it.

"If what I have said may not be considered as an excuse for not preparing a report, I will state to the Association that the health of members of my family has prevented me from giving the necessary time to the subject.

"I have made visits to different parts of the country; I was obliged to go to the mountains on account of the health of a member of my family, and remained there some time. Then I returned and proposed to visit several places where naphtha-gas, in whole or in part, was being manufactured, but I was prevented by the same cause. I think that the gentlemen of the Association will consider that as an excuse, if what I have said before is not considered as an excuse. When a person is drawn on the jury, if he wishes to be excused because he has so much business to attend to, I have frequently heard the Judge remark, "Why, you are just the kind of a man we want," so I think if you will not take the first excuse, you will the last.

"The committee was appointed at the annual meeting in 1874, to report to the Convention "*to-morrow*," on the value of naphtha-gas compared with coal-gas. You see how little the magnitude of the subject was appreciated by the Association; that the committee was requested to report "*to-morrow*" on the value of naphtha-gas compared with coal-gas. In the afternoon I asked the Convention if a report was insisted upon, and stated that it would be impossible to prepare and present a report in that time, and leave was granted to report in six months.

'At that meeting, Mr. LITTLEHALES, the gentleman from Canada, moved that the committee be especially requested to investigate and report to the Association, upon the following points in reference to the naphtha-gas process, which was seconded by Mr. CATHELS:

'1st. The cost per 1000 for material. 2nd. The cost per 1000 for labor. 3rd. The cost per 1000 for purification. 4th. The cost per 1000 for wear and tear of retorts. 5th. The cost per 1000 for gas at consumers' meters calculated on gas paid. 6th. The rate of wages. 7th. Amount of capital required per million feet annual make, to construct works for naphtha, as compared to that of coal.'

"Now, Mr. President, you see there is an immense amount of work laid out for us, and I regret to say that we are not able to answer, conclusively, one of those questions. Immense works are being built all over the United States and Canada, and we might say the whole of America, which you know are very expensive. We find by correspondence, that naphtha-gas is made either clear or in combination with other materials, all over the United States. I could not name the number of companies where it is used more or less, but there are a great many. So you see if we were to make a report, and base the comparisons and estimates upon the operations of one company, such a report would be of little value. In order to report intelligently we would have to obtain data from five or six companies. You might ask why we did not visit these works and obtain the data. It is true, it was suggested, at the last meeting of the Association, that the expenses of the committee should be paid to travel. That would not help the matter any, for, though our expenses might be paid, who would pay us for the loss of time in our business?

"Another difficulty about this investigation was that we found it utterly impossible to embrace all that we ought to embrace in the report, in order to make it satisfactory. So I have appeared before you in this manner, and trust you will pardon me for making a verbal instead of a written report. I know it is the custom to make these reports in writing, and it would probably be more courteous to the Association to present what I have to say in the form of a paper, but I supposed we would have a faithful reporter, and that a verbal explanation would answer my purpose just as well.

"I wish once more to thank the Association for the honor conferred upon the committee in referring to us so important a matter, and to express our regret that we are unable to make this long-desired and long-looked for report.

"We have tried as a committee to discharge our duty faithfully, but it has been the result of circumstances over which we had no control—such as want of time and inability to leave our families by reason of sickness, that we have not been able to make a report, and also for other reasons, which appear cogent when presented.

"Now, Mr. President, we do not wish to be understood as saying that there is no need for further investigation. Whether such investigation should be made by this Association, or by the members of different companies, I will not say; that is for the Association to say whether it will appoint a committee or not. If they determine to do so, I should say that there should be placed upon that committee one or two gentlemen who are interested in the naphtha process. Or, perhaps, the Association might resolve itself into a Committee of the Whole, and investigate the subject in that way. I do not think it would be well to dismiss the matter entirely. I think there is something in it, and that it is worthy of full investigation and consideration. There are gentlemen who are interested in this process—energetic and conscientious gentlemen—who do the brain work, and who are expending large sums of money in the investigation and practical operation of the naphtha process. They are, we may say, doing it for themselves and for their own benefit. But if they are expending a large amount of money and much time and labor in experimenting upon, and investigating, this important subject, and in so doing make discoveries and arrive at practical results, which will be of permanent advantage to themselves in manufacturing gas, those discoveries and results will also be of benefit to us, and hence they deserve our warmest thanks. Therefore, I think the Association should, by all means, prosecute earnestly inquiries in regard to this most important matter. If any one is so fortunate as to discover a process of manufacturing gas from naphtha, or from anything else which shall be cheaper and better, then, certainly, it will be of benefit to all who are engaged in gas manufacture. We cannot deny that the naphtha question is a most important one; that it has not been fully investigated, and that its capabilities and practical results have not, as yet, been fully determined. Some benefits may have resulted, possibly, from the experiments which have already been made, and I do not think we should do anything to prevent those who have made them, from going on with the good work.

"If they can accomplish anything, and are willing to spend their time and their money, their thoughts and their labor, on the subject, let them do it. Do not let us do anything to prevent it, but rather let us seek, by earnest and conscientious investigation, to discover if there is anything of permanent and practical benefit in it.

"Again permit me to thank you, gentlemen of the Association, on behalf of myself and of the other members of the committee, for the honor you conferred upon us in entrusting to us the investigation of this important question, and to express our most sincere regret that circumstances over which we had no control, have prevented us from making a report to-day.

"In conclusion, I most respectfully repeat my request that the committee be discharged from further duty in the matter."

Mr. PRICE—"Mr. President; I know that the members of this Convention very much regret, and are disappointed, that this committee has not been able to report. I think almost all of us have looked forward with a great deal of interest to the results of their investigation of the manufacture of naphtha-gas. The London *Journal of Gas Lighting* anticipated this report and spoke of its importance; but I move that the apology of the committee be accepted and that they be discharged." Carried.

The following is a summary of the remaining proceedings of the Association:

The election of officers was then proceeded with, and the result will be found in another column. The re-election of Gen. ROOME, as President, was received with applause; and, upon taking the chair, the President addressed the members in a very appropriate, earnest speech, urging upon all the importance of a strict attention to the matters in hand, and the necessity of adhering to facts, omitting the poetry and leaving the eloquence to others. After paying a passing tribute to the honorable calling in which they were engaged, the President closed amidst the hearty applause of all present. An adjournment till 3 P. M. was then voted, at which time the Association re-assembled, and listened to a paper read by Mr. J. D. PATTON, of Trevorton, Pa.—"On the Use of Petroleum and its Products in the Manufacture of Gas." We regret that want of space prevents our giving this paper in full in this issue, but we give the following salient points:

His experience with petroleum in gas-making was almost entirely with the grade of oil known as naphtha or benzine. The result of that experience is a yield averaging about seventy feet per gallon of seventy-candle gas, in constant running day after day. He never had been able to exceed 100 feet per gallon, or obtain results below 56 feet per gallon. Amount of fuel for converting 1 bbl., about 7½ bushels coke. The gas thus made stands all tests that coal gas will. Retorts last, on an average, 6 months, and cost $90 per bench to renew. Cost of 70-candle gas, $1.17½ per thousand, exclusive of labor and interest. The labor required is less than half that of coal-gas. "As far as established companies are concerned, can it be used profitably in connection with coal-gas?" His experience shows that it can, by using 8 or 10 per cent. of oil-gas. By working out all the gas you can, you may, from Westmoreland coal, get 13,000 feet gas, of 16 candles, from one ton of coal and 16 gallons of oil; or 1 ton coal and 32 gallons oil would give 14,000 feet of 20 candle gas, etc. He stated these as facts, and refrained from advocating any special mode of oil-gas making.

In reply to numerous questions, Mr. PATTON stated that by a "ton of coal" he meant 2,240 lb. That the oil was brought in contact with the red hot surface, by dropping it into the retorts. That he ascertained the quality of the gas by using a one-foot burner, and applying the photometric test. That the gas thus produced possessed five times the illuminating power of coal-gas. That he was not able to state what effect leakage would have on the result, as he tried to have as little leakage as possible. That he was not able to state the weight of the mixture he referred to in the paper, and that the price charged for the gas, and actually obtained, was $10 per thousand feet. Mr. PRICE stated that, in his opinion, poor coals could not be used profitably in the manufacture of gas. That a coal which was too poor to be used by itself, could not be made very valuable by the employment of enriching materials. Mr. OLNEY gave his experience in the use of coals, and Mr. NEAL stated the results he had obtained from using one-third Lingan coal, mixed with Westmoreland and Youghiogheny. He thought Mr. PATTON was mistaken about its being poor coal. Mr. EDGERTON discussed at length the manufacture of gas from oil. Mr. NETTLETON read some tabular statements of results obtained at Utica, N. Y., by the Gwynne-Harris process and Lowe's patent, after which the meeting adjourned till 8 P. M., at which hour the members reassembled and listened with great interest to a very instructive lecture, by Prof. C. F. CHANDLER, of Columbia College, School of Mines, on "Gas," illustrated with many beautiful experiments.

At 10 A. M., on the second day, the Association met according to adjournment.

The time for closing the discussion on naphtha gas having been fixed at 11 A. M., Mr. EDGERTON continued his remarks, and a discussion followed which was joined in by Messrs. ALLEN, PRICE, HARBISON, NEAL, and others.

Mr. D. BRUCE PEEBLES, of Edinburgh, Scotland, at the request of the Association, made an interesting statement, in regard to the manufacture of gas in England and Scotland, referring to the success that had been attained by Mr. FOULIS with his mechanical stoker. A paper upon "Wooden Pipes for Gas Mains," was read by Mr. LITTLEHALES, of Canada, and discussed at length. Mr. GEEDENIER, of Bridgeport, Conn., presented a paper on "Purification," which was followed by statements from various members as to their experience in this matter.

After the recess, the subject of lime purification was further discussed, and after that the subject of Naphthaline. Mr. EDGERTON then favored the members with an explanation and exhibition of an apparatus for "the correct analysis of gas," and also another "for determining the illuminating power of gas." Mr. ROWLAND explained his mechanical stoker, and invited all to come and see it at his works. An attempt to fix the place for the next annual meeting at Philadelphia failed from a constitutional provision, making New York the place. Mr. PRICE urged some very cogent reasons why Philadelphia, during the Centennial, would be an unfit place for a *business* meeting. If members wished to attend the Centennial, they could do so either before or after the business of the association was completed. It was decided that there should be no semi-annual meeting next Spring, and that the next annual meeting should be held in this city, in October.

A motion to appoint a committee of five to report at the next meeting on

"naphtha gas," was amended so that "the Committee of the whole" should have charge of the matter, and adopted.

The value and utility of dry scrubbers for removing napthaline, was discussed, and quite extended statements made as to the working of those in use in the Harlem Gas Works. After some minor business, the meeting was adjourned.—*Gas Light Journal.*

Tempered Glass.

BY PERRY F. NURSEY, C. E.

CONCLUDED FROM PAGE 428.

GLASS which has been treated in this manner undergoes a physical transformation as complete as it is remarkable. Its appearance is in no way altered, either as regards transparency or color—if colored glass be so treated—and its ring or sound is not in any way affected. It has, however, exchanged its distinguishing characteristic of extreme brittleness for a degree of toughness and elasticity which enables it to bear the impact of heavy falling weights and smart blows without the least injury. A great number of experiments have been made, the results of which fully corroborate this fact. From these it will suffice to select a few by way of illustration. Watch-glasses, which perfectly retain their transparency, have resisted every attempt to break them by crushing between the fingers, or by throwing them about indiscriminately on the bare floor. Glass plates, dishes, colored lantern-glasses, and the like, have been similarly thrown about by the handful, stood upon, and otherwise maltreated, but without the slighest injury accruing to them, except, perhaps, when a solitary specimen which had been imperfectly tempered got with the rest. Experiments have also been carried out to ascertain the comparative strength of toughened and untoughened glass when submitted to bending stress. Here a number of pieces of glass, each measuring six inches in length, by five inches in breadth, and having a thickness of about one-fourth of an inch, were tried. Each sample in its turn was supported at the ends, and a stirrup-piece was hung upon the center of the glass, a weight-rod hanging vertically from the under-side of the stirrup. With this arrangement applied to a piece of ordinary glass, the weight-rod was gradually loaded until a weight of 279 pounds was reached, when the glass broke. A piece of toughened glass of similar dimensions, similarly treated, did not give way until a strain of 1,348 pounds had been reached, and before it yielded a considerable deflection was produced in it, showing its elasticity. Had its strength been due to rigidity or inflexibility alone it would not have assumed a curve before yielding to the pressure brought upon it.

Satisfactory as the above results may appear at the first glance, they will be seen upon reflection most inadequately to represent the relative strength of toughened and untoughened glass. It will be observed that the test applied was that of long sustained and gradually increasing pressure, which could rarely occur to glass articles in every-day use. Glass is subject to sudden, sharp blows, either from articles falling down on other substances or from extraneous bodies falling upon, or being brought in contact with, them. Hence it is clear that to obtain a true estimate of the new process, glass must be subjected to tests which fairly represent the conditions of the accidents to which it is ordinarily exposed. This estimate has been arrived at repeatedly by placing pieces of plate-glass in a frame and allowing weights to fall on them from given heights. One experiment from a number—and which was made publicly—will illustrate this test: A piece of ordinary glass, six inches long by five inches wide, and one-fourth of an inch thick, was placed in a small frame which supported the glass around its edges, and kept its under-side about half an inch from the floor. A four-ounce weight was dropped on it from a height of one foot, and the glass was broken. A piece of toughened glass of corresponding dimensions was then placed in the frame and the same weight dropped upon it several times from a height of ten feet, but without fracturing the glass. An eight-ounce weight was then substituted, and repeatedly dropped upon the glass from the same height as before, and with the same result, no impression whatever being made upon it. Its destruction, however, was finally accomplished by means of a hammer. Perhaps the most crucial test to which toughened glass could be put would be to let it fall on iron. This has been done, and in public, too. A thin glass plate was dropped from a height of four feet on to an iron grating, from which it rebounded about one foot, sustaining no injury whatever.

As singular as any other feature presented by toughened glass are the results of its destruction. Ordinary glass, upon being fractured, gives long, needle-shaped, and angular fragments. Not so with toughend glass, which is instantaneously resolved into mere atoms. The whole mass is at once disintegrated into innumberable pieces, ranging in size from a pin's-point to an eighth of an inch in diameter. It sometimes occurs that pieces measuring half an inch or an inch across may remain whole, but these pieces are traversed in all directions by a net-work of fine lines of fracture, and with the fingers are easily reduced to fragments. Microscopical examination shows the fragments of toughened glass—large and small—to follow the same law as regards the form and character of the crystals, and on some of the larger crystals being broken up they have been found to separate into smaller ones of the same character. The edges of these fragments, too, are more or less smooth instead of being jagged and serrated as are those of fragments of ordinary glass. Hence a diminished tendency in the former to cause incised fleshwounds when handled.

When glass has been imperfectly treated, as has sometimes happened in M. DE LA BASTIE'S experiments, it will not stand the same amount of rough usage as will perfectly-toughened specimens. The fact of the toughening process having been incomplete is made manifest upon the destruction of a sample in three different ways chiefly. Independently of its yielding at an early stage either to blows or pressure, it will show upon destruction either needle-fractures approaching in appearance those of ordinary glass, or pieces varying from the size of a sixpence to that of a half-crown will remain unbroken and untraversed by lines of fracture. Again, the mass may be wholly fractured, but on looking at the fragments edgewise, a narrow, milky streak will be apparent midway between the upper and under sides of the glass, indicating that the influence of the bath has not extended through the glass. Where the process has been perfectly applied, no such phenomena are exhibited, the crystals being of uniform transparency throughout the whole mass.

Such, then, is DE LA BASTIE'S toughened glass, which possesses enormous cohesive power, and offers great resistance to the force of impact. There is, however, one peculiarity which, for the present, tells against it in a slight degree—it cannot be cut through with a diamond. Scratched its surface can be, but there the action of the diamond ceases. This drawback only applies in the case of window-glass in odd-sized frames; for the practice of the present day, with builders, is to make window-sashes of certain fixed dimensions, and glass-manufacturers work to these dimensions. It is not at all improbable, however, that ere long a means will be devised for cutting toughened glass to any size or shape; experiments are, in fact, now being conducted with this view, and so far as they have gone they give promise of success. But if toughened glass cannot be cut by the diamond, it can be readily cut and polished by the wheel, as for lustres and the like, so that wine-glasses and articles of cut glass-ware can be toughened directly as they are made, and cut and polished subsequently.

Superficial observers have affected to detect in the toughening process a similar condition of matter to that which obtains in Prince Rupert's drops. The error of such a conclusion, however, becomes evident upon a little consideration. Prince Rupert's drops are made by allowing melted glass to fall into cold water; the result of which is a small pear-shaped drop, which will stand smart blows upon the thick end without injury; but the moment the thin end, or tail, is broken, the drop flies into fragments. Now, glass and water, and—as far as present knowledge goes—no other substances besides, expand while passing from the fluid into the solid condition. The theory of the Rupert drops is, that the glass being cooled suddenly, by being dropped into cold water, expansion is checked by reason of a hard skin being formed on the outer surface. This exterior coating prevents the interior atoms from expanding and arranging themselves in such a way as to give the glass a fibrous nature, as they would if the glass was allowed to cool very gradually. An examination of the Rupert's drop shows the inner substance to be fissured and divided into a number of small particles. They exist, in fact, in a state of compression, with but little mutual cohesion, and are only held together by the external skin. So long as the skin remains intact the tendency of the inner particles to expand and fill their proper space is checked and resisted by the superior compressive strain of the skin. Nor is the balance of the opposing forces disturbed by blows on the thick end of the drop, which vibrates as a whole, the vibrations not being transmitted from the exterior to the interior. But by breaking off the tail of the drop, a vibratory movement is communicated along the crystalline surface, admitting of external expansion, by which the cohesion of the particles composing the external skin is overcome, and the glass is at once reduced to fragments. As the skin of toughened glass can be cut through with the diamond, and as, moreover, its surface can be removed by polishing and cutting with the wheel, without injury to the mass, it is evident that it must exist under conditions very dissimilar from those of a Rupert's drop. Moreover, melted glass, on being dropped into DE LA BASTIE'S bath, gives a similarly shaped body, from which the tail can be broken off, piece by piece, without injury to the body, which can be scratched, knocked and thrown about, without exhibiting any signs of deterioration. Bearing upon this point, too, comes the fact that toughened glass can be elegantly engraved, either by TILGHMAN'S sand-blast process, or by means of hydrofluoric acid, in the ordinary way, the surface or outer skin being thus removed.

M. DE LA BASTIE'S invention marks a distinct era in the history of one of our most important industries. Never during the history of glass-manufacture, which extends over some 3,500 years, has any radical change been effected in its character. The glass-blowers of Egypt, who practised their art before the exodus of the children of Israel, and representations of whom have been found on monuments as ancient as that event, produced a similar glass to that of our own times. This has been proved by an examination of glass ornaments which have been discovered in tombs as ancient as the days of Moses. It has been proved, too, by a large bead of glass, found at Thebes, upon which was inscribed the name of a monarch who lived 1,500 years B. C., and which glass was of the same specific gravity as our own crown-glass. It is true, Pliny mentions that a combination was devised in the reign of Tiberius, which produced a flexible glass; but both the inventor and apparatus were destroyed, in order, it is said, to prevent the value of copper, silver, and gold from becoming depreciated. There is, however, no evidence whatever that this was the toughening process of DE LA BASTIE, nor does the record in any way detract from the merits of that gentleman as the inventor of an important economic process. The fact remains that the world has now given to it for the first time, in a practical form, an invention by which the brittleness of glass is superseded by an attribute of the most valuable nature—toughness. It is by no means improbable that the old adage, "as brittle as glass," will soon be superseded by a new one—"as tough as glass."

What may be the ultimate result of the introduction of this invention in practice, it is difficult to foresee, so wide-spread, so universal does its application seem. Not only is it desirable to render durable such articles as are at present made from glass, but to satisfy a want long felt in every department of art, science, and manufacture, of such a material as toughened glass; and this want can now be satisfied. So numerous are the opportunities which present themselves for its application, and so well adapted does it appear to be where cleanliness, transparency, resistance to heat and chemical action, and comparative indestructibility are desiderata, that it would be idle to attempt to categorize them.

The invention is being taken up practically on the Continent, and no less in England. Messrs. POWELL, of Whitefriars, are introducing it in their glass-works, and two other firms in the North of England are doing the same. It is by no means improbable that its first introduction in practice in England will be at the aquarium, now in course of erection at Westminster, where it is intended to use it for the tanks.

There still remain some questions to be answered with regard to the phenomena exhibited by toughened glass—questions, however, which in no way affect the practical value of the material. Its peculiarities continue to form the subject of investigation, and, as soon as any conclusions of value to science have been arrived at, they will be made known, so that the physical aspect of toughened glass may again be reverted to in these pages. It only remains to observe that the remarkable character and unique nature of M. DE LA BASTIE'S invention are such as to render it probable that he will not only materially benefit those of his own time, but will bequeath to posterity an invaluable legacy.—*Popular Science Review.*

Thin Iron.—Messrs. GRAFF, BENNETT & Co., proprietors of the Millvale Iron Works, Pittsburgh, have just rolled some sheets of iron that are said to be but 15,500 of an inch in thickness. They were rolled on ordinary plate rolls, and the iron used was puddled bar made in a Danks furnance.

Prices of Coal at the Westphalian Mines.—

	s.	d.	s.	d.	
Gas coal	8	6 to	9	6	per ton.
Machine	7	6 to	8	6	"
Coking—fine screened	6	6 to	7	0	"
Boiler and fine	7	0 to	7	6	"
Coke—1st quality	14	0 to	16	0	"
" —2nd quality	11	0 to	13	6	"

CORRESPONDENCE.

Policy of the Gas Light Association.

CLEVELAND, OHIO, November, 2, 1875.

TO THE EDITOR.—SIR:—The last issue of the ENGINEERING AND MINING JOURNAL has been received, and I notice a paragraph relative to the late meeting of the Gas Light Association, in which you reiterate the charge made in the issue of October 23d, that certain officers of the Association refused to permit you to make a report of the doings thereof. Holding the position of Vice-President of the said Association, and having been present at all the sessions of the late meeting, it is strange to me, that I heard nothing of such refusal from any source until I saw your statement. I do not question your assertion, but I wish to say that I am surprised to learn that any officer or officers of the Gas Light Association interfered with you, or denied you any opportunity to make the report proposed. For one, had my attention been called to the matter, I should have been in favor of extending to your representative every facility for carrying out your plan. The Association is not a secret society, has nothing to disguise, and all its meetings have been open. It was organized for "the promotion and advancement of knowledge, scientific and practical, in all matters relating to the construction and management of gas works and the manufacture, distribution and consumption of illuminating gas, to the end that its cost may be cheapened, and its consumption increased." To this worthy end the Association devotes its efforts, and will continue to do so.

I can but think there has been some misapprehension in the matter of which you complain, for which the officers of the Gas Light Association should not be held responsible Very respectfully, W. H. PRICE.

Notes.

It is Reported that 100,000 tons of coal are to be stocked at Weedsport this Fall.

Prize Essay on Gas.—The French Gas Makers' Association propose a prize of £20 for the best essay on the improvements realised during the last twenty years in the manufacture of gas. MSS. are to be sent in before March 1st, 1876. The essay must be written in French.

Cast Steel Wire Rope.—Steel wire rope has replaced iron wire rope with advantage in several collieries in Prussia, particularly in Westphalia. In all the pits, however, it has been found that cast steel rope must be lubricated at least once a week, and laid on one side on the least appearance of fraying. At the Saarbrück collieries the experience of other places was repeated, that steel-rope could be used of a smaller strength than iron, but required a greater drum cylinder.

The Chicago Soft Coal Exchange held a meeting on Saturday afternoon at their rooms, corner of La Salle and Randolph streets, General HAMILTON presiding. The principal thing done was to discuss the question of profits and margins being shared with list dealers to the detriment of the exchange. It was stated the board had granted no authority for such a step. A committee was appointed to confer with the Hard Coal Exchange in regard to advancing the price of coal. The meeting adjourned till next Friday afternoon.

SELECTED LIST OF PATENTS.

FOR THE WEEK ENDING OCT. 30, 1875.

RELATING TO MINING, METALLURGY, GAS MAKING, ENGINEERING, &C. REPORTED FOR THE "ENGINEERING AND MINING JOURNAL" BY LOUIS BAGGER & CO., SOLICITORS OF PATENTS, WASHINGTON, D. C.

168,621. Grinding and Amalgating Pans, Chas. Cummings, Virginia City, Nev.—In this invention, the mullers, in combination with the dies and shoes, have a gradually increasing thickness of metal toward their outer edges, where the wear is greatest.

168,795. Blasting Cartridges, F. W. Smith, Bridgeport, Conn. This cartridge is composed of a cylinder of paper, or muslin, or other like material, and having its lower end confined between the edges of two metallic cups which have closed bottoms, one cup being within, and the other without the case.

168,695. Separating Gold from other Metals, Conrad Wiegand, Virginia City, Nev.—This process consists: first, of the conversion of all amalgamable metals into one amalgamated mass; second, of removing the silver therefrom; third, retorting the remainder, containing the gold, into a highly porous spongiform mass; fourth, roasting the same with access of air; fifth, dissolving the base metal oxides in dilute sulphuric acid; sixth, digesting the residuum in dilute nitric acid; seventh, washing the gold with water; eighth, melting.

168,749. Machines for Elevating Building Materials, G. H. Kammacher, Columbus, O.—On a foundation-piece, four posts, with attaching horizontal platforms, are each adapted to vertical extension by tenons and mortises at their sectional ends. Sliding on the outside of each pair of posts, and guided by friction wheels is a platform frame, counterbalanced by one or the other post, both vertically reciprocating by a hauling rope over wheel at top. On each there is a connecting crank-shaft having pawls working on ratchets along the posts; each frame has at top a detachable carrier.

168,623. Air and Gas Engines, G. W. Daimler, Muelheim-on-the-Rhine, Germany.—A loose piston, by the explosion, is driven to the end of the cylinder, where it is held. The products of the explosion cool and condense, creating a vacuum, which allows the main piston and the loose piston back of it to be driven to the end of the cylinder. The consumed gas is expelled, and a fresh charge drawn in between the main piston and the loose piston back of it. The gas being ignited, the above operation is repeated in the opposite direction.

168,758. Apparatus for the Manufacture of Illuminating Gas, P. W. McKenzie, Blauveltville, N. Y.—The decomposing chamber is air-tight. Air to cause combustion is admitted by way of the separately heated steam decomposer. The proper heat having been attained, air is shut off and steam admitted. Resultant gases are fixed. To his former apparatus fixing retorts are added. The valve between retort and chamber has a sand seal.

168,551. Gas Governors, S. D. Baldwin, Chicago, Ill.—The gas passage is in the wall of the chamber. The latter is made in two sections, which hold between them the diaphragm, which also serves as a packing. The self-sealing cap is to be filled with wax.

STATISTICS OF COAL PRODUCTION.

This is the only Report published that gives full and accurate returns of the production of our Anthracite mines.

Comparative Statement for the week ending Oct. 30.

	1875.		1874.	
	Week.	Year.*	Week.	Year.
Wyoming Region.				
D. and H. Canal Co	69,936	2,533,818	58,603	1,991,960
D. L. and W. RR. Co	65,456	2,806,117	63,028	2,075,265
Penn. Coal Co	33,917	1,147,781	29,582	1,110,893
L. V. RR. Co	19,347	774,568	19,293	795,300
P. and N. Y. RR. Co	594	82,398	1,879	52,948
C. RR. of N. J	59,915	1,149,492	41,197	1,240,251
Penn. Canal	13,221	251,909	8 901	287,405
Lack. and B. RR.	..	81,493	..	112 529
	262,466	8,327,676	225,493	7,566,551
Lehigh Region.				
L. V. RR. Co	96,650	1,659,020	77 932	2,674,398
C. RR. of N. J.	49,519	587,939	36,822	985 740
D. H. and W. B. RR.	1,613	67,310	1,792	35,166
	147,582	2,314,269	116,546	3,695,304
Schuylkill Region.				
P. and R. R. RR. Co	135,197	3,800 729	183,712	4,417,112
Shamokin & Lykens Val.	31,003	1,026,461	32,764	807,026
	216,200	4,827,190	216,476	5,224,138
Sullivan Region.				
Sul. and Erie RR. Co	712	7.851	609	30,633
Total	626,960	15,976,986	559,124	6.616,626
Increase	67,836	..	..	..
Decrease	..	639,640	..	..

* Year beginning January 1st.

The above table does not include the amount of coal consumed and sold at the mines, which is about seven per cent. of the whole production.

The following Table does not give the entire production of our Bituminous mines, but it is by far the fullest report published.

The Production of Bituminous Coal for the week ending Oct. 30, was as follows:

Tons of 2,000 lb., except where otherwise designated.

Cumberland Region, Md.	Week. Tons.	Year. Tons.
Tons of 2,240 lb	47,411	1,963,285
Barclay Region, Pa.		
Barclay RR., tons of 2240 lb	6,642	275,053
Broad Top Region, Pa.		
Huntingdon and Broad Top RR	5,075	173,420
*East Broad Top	1,242	37,980
Clearfield Region, Pa.		
*Snow Shoe	932	51,559
*Tyrone and Clearfield	20,153	714,249
Allegheny Region, Pa.		
*Pennsylvania RR	4,898	180,764
Pittsburgh Region, Pa.		
*West Penn. RR	4,406	277,500
*Southwest Penn. RR	841	18,144
*Penn. & Westmoreland gas coal, Pa. RR.	16,748	567,557
*Pennsylvania RR	9,213	352,092
Kanawha Region, W. Va.		
Chesapeake and Ohio RR	4,882	145,458

* To Oct. 21.

The Production of Coke for the week ending Oct. 21.

Tons of 2000 lb.	Week. Tons.	Year. Tons.
Tyrone and Clearfield	..	283
Alleghany Region	5	58
West Penn. RR	1,099	40,869
Southwest Penn. RR	15,004	445,878
Penn. & Westmoreland Region, Penn. RR.	726	28,823
Pittsburgh, Penn. RR	3,804	87,978
Total	20,638	603,891

The receipts at Port Richmond for the week were 80,000 tons, shipments 60,000 tons, and balance on hand 200,000 tons.

The decrease of shipments of Cumberland Coal over the Cumberland Branch and Cumberland and Pennsylvania Railroads amounts to 68,945 tons.

The Exports of Coal from Baltimore for the week were 0000 tons, and for the year, 32,772 tons as compared with 62,996 tons to the corresponding time in 1874.

Receipts of Coal at Boston, for week ending Oct. 29, and years from September 1st, 1874 and 1875.

From	Week. Tons.	Previously. 1875. Tons.	1874. Tons.
Alexandria and Georgetown	2,358	26,022	35,056
Philadelphia	32,400	158,859	139,653
Baltimore	4,278	32,190	41,738
Other places	9,585	70,562	58,985
Great Britain	—	704	1,270
Nova Scotia	647	8,647	10 421

Shipments from Pictou, N. S., for the week ending Oct. 23:

	Tons. Week.	Year.
To United States	1,540	22,844
" West Indies	125	3,148
" South America	—	4,772
" Canada	3,770	130 902
" Other Provinces	1,768	57-337
	8,329	219,003

Belvidere Delaware RR. report:	Week.	Year 1875.	Year 1874.
Receipts of coal at Coal Port (Trenton)	9 731	150,500	240,565
" " " South Amboy	13,120	204,725	522,604
Shipments of Coal Port (Trenton)	9,750	147,027	241,507
" South Amboy	8.595	276,595	532,845

Shipments from Block House, Cow Bay, C. B., to the following destinations, from Oct. 15 to Oct. 25, 1875:

	Week.	Year.
Provinces	309	7,039
West Indies	107	1,393
United States	1,743	11,036
	2,159	19,468

COAL TRADE REVIEW.

NEW YORK, Friday Evening, Nov. 5, 1875.

Anthracite.

All descriptions of stove are very active, and the demand for some brands of chestnut is in excess of the supply of these particular kinds. Egg is in fair request with most of the companies, while grate is in most cases dull. Lump and steamer sizes are very dull with all the companies, and owing to the very large percentage of waste (usually not less than 25 per cent.) made in reducing these sizes to such as are suitable for domestic use, many have been deterred from doing so; hence a glut in the market of the former sizes. The inadequate supply of some brands of chestnut coal in this market has been caused by a large demand from the West, where this description of coal is largely used in base-burning stoves, and where better prices have been, and are now, realized than in this market. The approach of the close of navigation naturally tends to sustain business for the time being, as dealers and consumers at such ports as will be closed during the winter do not wish to be caught with short stocks, and past experience has taught them that captains of vessels and canal boats will not run the risk of having their crafts frozen in; hence the necessity of making early provisions. When this demand is exhausted, trade will, undoubtedly, be very quiet, as buyers at such ports as are easily accessible during the winter months have no inducements to purchase beyond their immediate necessities. There are rumors of considerable underselling on certain sizes of coal. We cannot vouch for the correctness of these statements, although we believe that they are true to a certain extent.

The production last week was the second largest this year, and, from what has since transpired, it appears to have been unwarranted. The Reading Company reported a stock of 200,000 tons at Port Richmond on the 30th ult., in addition to which there was a large quantity standing in cars. Since then they have been compelled to stop work at their mines, until a portion of this stock can be worked off. The Delaware and Hudson Canal Co. placed their men on three-quarter time on the 1st inst. There is already talk of a very large curtailment of production, or a total suspension, during January and February.

Failure of Messrs. C. B. Conant & Co.—On the 1st. inst., the announcement was made that this firm had made an assignment to WM. H. MARSTON Esq., for the benefit of its creditors. Mr. MARSTON says he will be unable to give any information relative to the condition of the firm until the books are fully posted up, which work is progressing as rapidly as possible. The immediate causes of the firm's failure are said to be (1), that they have, within the last month, sustained considerable losses owing to failures among their customers; and (2), the inability of Mr. CONANT to attend to his business owing to an accident which occurred to him about two months ago, and which has confined him to his ho

ever since. The liabilities of the firm are estimated, by good authorities, at about $125,000, and it is thought that the assets will be very small. Four of the large companies are the principal creditors, and it is not known that any of the smaller companies or firms are creditors for large amounts. Such being the case, no embarrassment to the trade, from this failure, is anticipated. Since this occurrence, credits are being more closely scrutinized, which may result in bringing to the surface weakness in other firms.

Failure of Burton Bro's & Co.—*The Mahanoy Valley Record* says: 'BURTON BRO'S & Co., who operate the Ball's Tunnel Colliery at Mount Carmel, suspended payment on Monday last, without settling with their men. The consequence was a run on the store, and we saw men wheeling goods from it to their homes on wheel barrows. In this country something is needed that will secure to workingmen the payment of their wages. Here is a case of great hardship. After the long suspension it has taken the men all summer to bring themselves around and pay off their debts (some not paid off yet) and just as they are recovering themselves their employers suspend without paying them their hard-earned wages. Several coal operators, we hear, are likely to be losers, as the company were heavy shippers of coal to the West."

The Production of anthracite coal for the week ending October 30, was 626,960 tons, and from January 1, 15,976,986 tons. The production for the corresponding week of 1874 was 559,124 tons, and from January 1, 1874, 16,616,626 tons. The production for the week ending October 23, 1875, was 579,982 tons. From the above figures it will be seen that there was an increase in the production of last week, as compared with the previous week, of 46,978 tons, and of 67,836 tons, as compared with the corresponding week of 1874. There has been a decrease since January 1, as compared with the corresponding period of 1874, of 639,640 tons.

The Lehigh and Wilkes-Barre Coal Company shipped 236,000 tons of coal from Port Johnston during October, which was the largest shipmen's ever made by this company in one month.

Bituminous.

The demand for all descriptions of bituminous coals is very quiet, prices are demoralized, and the output is falling off. The Cumberland output last week was some 6,000 tons less than during the corresponding week of 1874; that of the Clearfield Region, on the contrary, was about as much in excess of last year's production. The latter region, although not running as much coal as a few weeks ago, still maintains its output very well, especially when the great depression in manufacturing industries is considered.

Freights.

From this port and Philadelphia slight advances are noticeable, and the anxiety of certain shippers to fill their orders for ports that will soon be closed, has induced them to pay higher rates, which has had its influence on the whole list. At Baltimore and Georgetown rates are without notable change. There is a scarcity of vessels noticeable at all coal ports. For further particulars see our regular quotations.

Philadelphia Coal Trade.

PHILADELPHIA, Nov. 5, 1875.

The wharves at Port Richmond are so full that the Reading Coal and Iron Company have stopped a number of their collieries for the present, and also instructed the parties supplying them to send them no coal this week. The scarcity of vessels can account for part of this blockade, but it is thought that if all the orders on hand could be filled it would not take long to fill up the vacuum, and render the receipt of more coal a physical impossibility. In the meantime, a few vessels have arrived for the last two days and afforded some slight relief. The freights have been rapidly rising, and $1 90 below bridges and $1 60 to Rhode Island are freely paid, while to Washington, $1 10 is the established rate, even for large vessels.

It is difficult to see how the collieries can all be kept running during November, the local trade being well supplied, and even the recent cold weather bringing no increase in the orders. Dealers are determined to go on from hand-to-mouth, and are unwilling to place faith in the programme of the companies to maintain rates to March next. The operators, themselves, have much to answer for this distrust, as they violate their agreement as to prices, and considerable shading off is the order of the day. Altogether matters seem to be in a critical condition with the Schuylkill coal trade. The Lehigh reports continued activity.

Wholesale Prices of Bituminous Coal.

Domestic Gas Coals.

Per ton of 2240 lb.	At the Shipping Ports.	Alongside in New York.
Westmoreland and Penn. at Greenwich, Philadelphia	$5 20	$6 50
" " at S. Amboy	6 00	6 50
Red Bank Cannel Pa. at Philadelphia	8 00	8 50
" " South Amboy	8 50	..
" Orrel	6 00	6 50
Youghiogheny, Waverly Co., at Balt.	5 00	6 50
Despard, West Va.	5 00	6 50
Murphy Run, West Va., at Baltimore	4 75	6 50
Fairmount, West Va., " "	4 75	6 50
Newburgh Orrel, Md. " "	4 75	6 50
Cannelton Cannel, W. Va., at Richmond.	9 50	11 00
" Splint, " "	5 00	6 50
Peytona Cannel, " "	9 50	11 50
Straitsville " at Sandusky, O.	3 25	10 00

Foreign Gas Coals.

	Sterling.	Am. cur'cy.
Newcastle, at Newcastle-on-Tyne	10/6@12/9	6 50@7 00
Liverpool House Orrel, at Liverpool	26/	13 00
Ince Hall Cannel "	47/	18 00@20 00
" Gas Cannel "	32/ 6d	13@14
Scotch Gas Cannel, at Glasgow, nominal,	28/ Gold.	7 50
Block House, at Cow Bay, N. S	2 00	5 50
Caledonia, at Port Caledonia	1 75	5 25
Glace Bay, at Glace Bay	1 80	5 50
Lingan, at Lingan Bay	75	....
Sydney, International and Reserve mines, at Sydney	2 00	5 50
Pictou, Albion & Vale mines, at Pictou.	2 25	5 75

Steam and House Coals.

Broad Top, at the mine, $1 25; at Amboy	4 75@5 00	5 25@5 50
Cumberland, at Georgetown and Alexandria, Va	4 00@4 25	5 25@5 50
Cumberland, at Baltimore	4 25@4 35	5 75@6 00
Clearfield and Allegheny, "Derby," "Kittanning," "Sterling," "Sonman," and "Eureka," at the mines, $1 00; at Greenwich, Phil.	4 65	5 65

Wholesale Prices of Anthracite Coal for Nov. f.o.b. at the Tide Water Shipping Ports per ton of 2240 lb.

	Lump.	Steamer.	Grate.	Egg.	Stove.	Chestnut.
Wyoming Coals.						
*Lackawanna and Scranton at Rondout and Hoboken	5 05	5 15	5 25	5 65	6 10	4 95
‡Pittston at Newburgh	5 05	5 05	5 15	5 40	5 90	4 85
Wilkesbarre at Port Johnston	5 05	5 15	5 25	5 65	6 10	4 95
Plymouth, R. A., *Net*	....	....	5 25	5 65	6 10	4 95
Susque. Coal Co. at Amboy W.A.	5 05	5 15	5 25	5 65	6 10	4 95
Kingston at Hoboken	5 05	5 15	5 25	5 65	6 10	4 95
Lehigh Coals.						
Old Company at Port Johnston	5 55	....	5 55	5 65	6 10	5 10
Old Company's Room Run "	5 55	....	5 55	5 65	6 10	5 10
§Sugar Loaf, Hobok. & Amb."	5 55	....	5 55	5 65	6 10	5 10
Lehigh Coal Exchange "	5 55	....	5 55	5 65	6 10	5 10
Honey Brook Lehigh	5 55	....	5 55	5 65	6 10	5 10
Spring Mt. C. Co. at Hoboken	....	....	....	....	....	....
Beaver Meadow at South Amboy	5 55	....	5 55	5 65	6 10	5 10
†Schuylkill Coals at Port Richmond.						
Schuylkill white ash	4 55	4 65	4 75	5 15	5 60	4 45
Schuylkill red ash	....	....	5 05	5 25	5 65	4 45
Shamokin white and red ash	....	....	....	5 40	5 80	4 50
Lorberry	....	....	5 90	5 90	5 90	4 65
Lykens Valley	....	....	6 50	6 50	6 50	5 50

	Per ton.
Freight from Hoboken and Weehawken to New York	40c.
" " Elizabethport & Port Johnston to N. York.	45c.
" " South Amboy to New York	50c

*Freight on Lackawanna coal from Rondout to New York, by boats or barges of the D. and H. Canal Co. 50c. per ton, the expense of towing vessels from New York harbor to Rondout and back will be borne by the Company.

†Freight from Port Richmond to New York (free of discharging) 85c. per ton.

‡Prices to the Trade.

§By Canal at New York, Jersey City and Brooklyn, 30c additional alongside.

Schuylkill coal is delivered f.o.b. of boats in New York harbor at 50c. per ton additional to these rates.

Pittston coal is delivered to carts in New York or Brooklyn at 65 cents per ton in addition to the above rates.

Retail Prices in New York.

Anthracite

Per 2000 lb.	Grate and Egg.	Stove.	Chestnut.
Pittston coal, in yard	$6 20	$6 40	$5 60
Lackawanna coal, delivered	6 75	7 00	6 25
Wilkes-Barre, "	7 00	7 25	6 75
Lehigh & Locust Mountain, del'd	7 00	7 50	6 50
Schuylkill Red Ash, del'd	7 00	7 50	

The Cost of delivering Pittston coal ranges from 40 cts. to $1 per ton, according to distance from the yard.

Williamsburgh, N. Y.
Lackawanna Coal at Yard.

Stove	$6 40
Egg	5 90
Chestnut	5 40

Bituminous.

Liverpool House Orrel, delivered, per ton of 2000 lb	$23 00
Liverpool House Cannel " " "	25 00
American " " " "	16 00
American Orrel " " " "	11 00
Red Bank Cannel " " "	14 00
Cumberland " " "	7 00

Baltimore, Md. Oct. 30, 1875.

Reported by our Special Correspondent.

ANTHRACITE.

Wholesale or Trade Prices per 2240 lb.

Wilkes-Barre "Lee" or "Diamond," *Pittston and Plymouth.* White ash.	In cars at depot.	By boats afloat.
Lump and steamboat	$4 80	$4 65
Broken	5 40	5 31
Egg	5 77	5 62
Stove	6 02	5 87
Nut	4 90	4 87
Shamokin, (red or white ash), and "Buston," freeburning white ash,		
Egg	5 80	5 62
Stove	6 00	5 87
Lykens Valley, red ash,		
All sizes	6 30	9 12

From wharf or yard, wholesale, 50@75c. additional.
By retail, all kinds and sizes, per 2240 lb. $7 00@8 00.

BITUMINOUS.

George's Creek and Cumberland f. o. b. at Locust Point	4 15 4 10
West Virginia f. o. b. at Locust Point	5 50
Youghiogheny Gas. f. o. b. at Locust Point	5 50
Swanton Coal, George's Creek	4 40

Boston. Oct. 30, 1875.

Reported by our Special Correspondent.

CARGO PRICES TO TRADE.

Lingan coal	$5 20	Westmoreland and Penn.	6 85
Caledonia	5 00	Waverly Co. Youghiogh'y.	6 80
Pictou	5 60	Cannelton Cannel	11 60
Block House	5 20	Cumberland	5 80@6 00
Red Bank Cannel	9 00	Anthracite .6 50@7 25	
Glace Bay	5 00	" retail..7 50@8 00	
Sydney	6 25		

A scarcity of vessels is reported at the shipping ports, and the receipts, both of anthracite and bituminous, have been light. The supply of coal here on the wharves is ample. The retail trade has not been quite so brisk. Consumers are not disposed to lay in a large supply, inasmuch as they can count on steady prices for the winter. There is a good demand for cannel coal at retail with few transactions in a large way. The week's movements in gas coals have been for the most part confined to the filling of old orders.—*Commercia Bulletin.*

Buffalo, N. Y. Nov. 3, 1875.

Reported by our Special Correspondent.

Freigh s to Chicago and Milwaukee $1—with vessels scarce.

Chicago, Ill. Nov. 2, 1875.

Specially reported by Messrs. RENO & LITTLE, Coal Merchants. Retail prices per ton of 2000 lb. delivered to buyer.

Reported by Lake to October 30:

	Tons.
Anthracite	449.504
Same time last year, including 100.000 tons carried over from 1873	437.648
Excess over last year	11.856

BITUMINOUS.

Lehigh Lump	$10 0	Briar Hill and Erie	@ 7 00
Lehigh grate and egg	9 50	Walnut Hill, Pa	@ 6 50
Lehigh stove and chest.	10 00	Midway, Pa	@ 6 50
Lackawanna, Wilkes Barre and Pittston*		Cannel	@ 8 00
Grate and egg	9 50	Blossburg	7 50
Stove and chestnut	10 00	Indiana Block	6 00
		Hocking "Brooks"	6 50
		Wilmington and Illinois	5 00

* 50 cents off these prices for car load lots to country dealers and manufacturers.

Cincinnati, O. Oct 31, 1875.

Reported by our Special Correspondents.

Prices remain unchanged.

Cleveland O. Oct. 31, 1875.

Specially reported by Messrs. WARNER, BATES & Co.

Prices remain unchanged.

Detroit, Mich. Oct. 30, 1875.

Specially reported by Messrs. ROBINSON & KEYS, Dealers in all kinds of coal.

Per ton of 2000 lb.

Lehigh Lump, per ton	$10 50	Blossburg	8 50
Lehigh " prep.sizes.	10 00	Briar Hill	7 50
Wilkes-Barre, Grate and		Willow Bank	7 00
Egg	9 00	Erie	7 50
Wilkes-Barre, Stove and		Massillon	7 00
Nut	9 50		

Erie, Pa. Oct. 30, 1875.

Reported by our Special Correspondent.

Wholesale, per ton of 2000 lb. Bituminous f. o. b.

Briar Hill lump	$3 75	Beaver lump	$3 50
Midway	3 25	Cat Fish	3 00

Indianapolis, Ind. Oct. 30, 1875.

Specially reported by Messrs. COBB & BRANHAM

Prices unchanged.

Louisville, Ky. Oct. 30, 1875.

Specially reported by Messrs. BYRNE & SPEED.

Prices remain unchanged.

Milwaukee, Wis. Oct. 30, 1875.

Specially reported by Messrs. R. P. ELMORE & Co.

Prices remain unchanged.

New Orleans, La. Oct. 30, 1875.

Specially reported by Messrs. P. & R. DE VERGES, Wholesale and Retail Dealers in Pittsburgh, Anthracite, Cannel and other Coals

Pittsburgh coal, retail, per bbl	60c.
" wholesale	35c.
" steamboats, per box	50c.
" to manufacturers, per bbl	55c.
" shipments, per hhd	$6 00
Anthracite, wholesale, per ton	9 50
" retail, "	12 50
Virginia Cannel, per bbl	80c.
Scotch " "	....
Mt. Carbon, wholesale, per bbl	....
" " retail, "	....
St. Bernard, wholesale, per bbl	....
" retail, "	....

Pittsburgh, Pa. Nov. 3, 1875.

COAL.—The local trade continues quiet and devoid of any new or important features deserving of special notice. Business is fairly active as it usually is at this season of the year, but prices have undergone no quotable change: bituminous is quotable at 5¼@5½c. for lump delivered free on cars in Pittsburgh, and nut about one cent per bushel less. Anthracite is still quoted at $6 50 per ton on track, by the carload, for best Wilkesbarre, and $7 per ton delivered. As noted in our last, the consumption of anthracite is steadily increasing in this market. The continued suspension of navigation is favorable to those of our merchants who have coal in the down river markets.

COKE.—Trade is reported as being dull, which may be attributed largely to the depression in the pig iron trade, and as the two interests are closely identified, no material or permanent improvement can be expected in the former until there has been a revival in the latter. The fact is, trade in coke has held out better than was expected, and there is reason to believe that as soon as there is a revival in the pig iron trade and the furnaces now

idle started up, that the consumption of the latter will be larger than ever it was before, and it has been developed that in addition to making a better quality of pig, it costs but little if any more than coal. At current rates there is but little if any margin for profit, and it is thought prices cannot possibly go any lower, we continue to quote at $2 50@2 75 per ton delivered on cars here in Pittsburgh. A very fair percentage of the ovens are still in blast, but as yet there has been no accumulation of stock of any consequence.—*American Manufacturer.*

Richmond, Va. Oct. 30, 1875.

Specially reported by S. H. HAWES, Dealer in Coal.

Per ton of 2240 lb., f.o.b.

Kanawha Cannel	$12 00	New River Bituminous,	$1 50
" semi-Cannel	4 75	Clover Hill Coal	4 25
Coalburgh Splint	4 90	James River bitum	3 30
Lewiston "	4 90	" " Carbonite,	5 80
Kanawha Gas coal	4 50		

San Francisco.

From the *Commercial Herald*, Oct. 21, 1875.

Imports from January 1st to Oct. 1:

Anthracite tons	8,644	English, tons	40,943
Australian, tons	99,363	Vancouver Island, tons	49,555
Coos Bay, tons	26,722	Rocky Mountain, tons	53
Cumberland, tons	6,871	Seattle, tons	46,065
Mt. Diablo, tons (8 mos)	109,712	Bellingham Bay, tons	8 545

The nine months' statistics of the port which we published last week exclusively, showed a wonderful increase in the product of the Seattle mines and other variations, claiming particular attention from the trade, particularly in the falling off in the Mt. Diablo product, which is 41,454 tons, while the Seattle product shows an increase of 41,830 tons. The entire receipts for nine months show a total net increase of 48,000 tons. Of this, 30,000 tons is English, 21,700 tons Australian, 9,800 tons Vancouver, etc. Imports during the week embrace the following: *Mary Ann Wilson* (Sydney), 1,254 tons; *King Cenric* (New South Wales), 1,929 tons; *Greta*, 965 tons Glasgow (Scotch); *Orpheus*, 1,517 tons Seattle. The brig (late steamer) *Moses Taylor*, carried to Acapulco, for the Pacific Mail Steamship Company, 1,609 tons, valued at $6,357. The market at present is entirely bare of Lehigh, and consumers are forced to use Pittston in its stead. Jobbing rates of Anthracite rule high. We remark a better tone to the market for Australian. Wallsend cargoes may now be quoted at $8 75@9; Sydney, $8 25@9; Cumberland in bulk, $14@15; in casks, $16@18. We quote Bellingham Bay at $8 50; Coos Bay, $10; California Mt. Diablo steam, $6 25@8 25 for fine and coarse respectively; Cumberland, $16@18; Nanaimo, $9 50@10; Seattle, $9 25@10; Anthracite, $15@18. The *Isle of Bute*, from Glasgow, brought 400 tons Scotch. Br. ship *Nelson*, 1,668, from Australia.

Toledo, Ohio. Nov. 2, 1875.

Specially reported by Messrs. GOSLINE & BARBOUR.

Per ton of 2000 lb. on cars.

Hocking Valley	$3 40	Massilon	4 20
Straitsville	3 40	Youghiogheny	5 00
Shawnee	3 40	Blossburg	7 00@7 50
" nut	2 90	Cumberland	7 00@7 50
r Hill	5 50	Connellsville coke	7 00

ANTHRACITE.

Grate, screened	$7 50	Stove, screened	$7 75
Egg, "	7 50	Chestnut "	7 50
Lehigh Lump	9 00		

40 cents to $1 per ton additional for delivery at retail.

Halifax, N. S. Oct. 30, 1875.

Prices per ton of 2240 lb. in gold.

Sydney (old mines)	$4 00	Little Glace Bay	3 35
Gowrie	3 35	Blockhouse	3 35
Victoria	—	Albion (at Railroad)	4 00

Montreal. Oct. 30, 1875.

Specially reported by Messrs. ROBERT C. ADAMS & Co.

Wholesale per ton of 2240 lb.

Scotch Steam	$5 00	Cape Breton Steam	$4 25
Pictou "	4 85	Newcastle Smiths,	6 50

Anthracite at retail, per 2000 lb., delivered.

Egg	$7 50	Chestnut	7 25
Stove	8 00		

Rates of Transportation on Anthracite Coal to Tide Ports.

Lehigh and Wyoming Coals.

per ton of 224c lb.

	From Penn Haven.	From Mauch Chunk.	From Hazleton**		From Upper Lehigh.		From Ashley and Sugar Notch.	
To ‡ Newark, N. J., via Central Railroad of New Jersey	2 60	2 46	2 93	2 93	3 16			
‡ Mauch Chunk, Pa., via Central Railroad of N. J.	14	..	56	47	71			
‡ Philipsburg, N. J.	99	85	1 32	1 32	1 65			
Elizabethp't, Port Johnston, Hoboken and South Amboy, N. J., shipping and wharfage 35c. add.	2 24	2 10	2 59	2 57	2 80			
High Bridge, N. J.	2 40	1 95	2 80	2 54	2 72			
Somerville and Raritan, N. J.	2 80	2 35	3 20	2 35	3 12			
Elizabeth, Cranford, Westfield & Elizabethport, for consumption,	2 60	2 46	2 95	2 93	3 16			
¶ Jersey City, N. J., and New York, via L. V. RR. and Morris Canal.	2 85	2 40	3 17	3 24	3 54			
Andover, via Delaware, Lackawanna and Western RR	3 30	3 10	3 70	3 69	3 99			
Trenton, Somerset Junction and Greensburg, via P. RR. Belvidere Division	2 65	2 45	3 05	3 04	3 34			
Trenton, for shipment, including shipping and wharfage	2 11	1 95	2 45	2 46	2 76			

From *Mauch Chunk* to *New York* (towing limits) and Jersey City† via Lehigh Valley RR. and Morris Canal... $2 37

From *Mauch Chunk* to *Philadelphia* via L. V. RR. and North Penn. RR 1 75

††From *Phillipsburg, N. J.* to *Hoboken* for shipment via Delaware Lackawanna and Western RR., Morris and Essex Division 1 24

From *Lackawanna Junction* to **Auburn, N. Y.*, for shipment, via Southern Central R R. in connection with Pa. and N. Y. R.R. 2 53

From *Lackawanna Junction* to ‖*Weedsport* for *Rochester and Charlotte*..... 2 59

From *Lackawanno Junction* to *Sterling* for *Oswego, N.Y.*.. 2 62

‖ To this point for all places between Rochester and Buffalo the rate is 2 53

* The rate to this point for Syracuse is..... 2 00

** Rates on line coal from Hazleton are 10c. per ton above these figures.

‡ The cost of unloading is to be added to these rates. No charge less than 40c. per ton will be made for any distance. Tolls from Mauch Chunk to Phillipsburg for way points will be $1 15 per ton.

§ Twenty cents per ton less when five cars at a time to one party. Provided that where the reduction makes the rate $1 a ton, or less, the rate will be $1.

¶ 20 cents per ton additional for transferring coal from boat to boat, and 30 cents per ton for reshipment of same from wharves.

† Transportation on Coal destined for re shipment from this point is 20c. less than above rate.

†† The rate for consumption to this point is $1 80.

CANAL TOLLS, exclusive of towage, Bordentown to New Brunswick, when towed by the Company's Steam Tugs:

For Anthracite Coal..... 3½c.
Bituminous and Semi-bituminous Coal... 3½c.

Freights.

Per ton of 2240 lb.

Representing the latest actual charters up to Nov. 5, 1875.

PORTS.	From Philadelphia.	From Baltimore and Georgetown.	From Elizabethport, Port Johnson, South Amboy, Hoboken and Weehawken.
Augusta, Me	....	2 25	....
Albany	*85	1 70	....
Amesbury, Mass	....	....	....
Bangor, Me	†2 00	2 00	1 30
Bath, Me	1 60	1 70	1 30
Baltimore	....	....	....
Boston, Mass	§1 80	1 85@2 00	130
Bridgeport, Ct	*85	1 50	80
Bristol, R. I.	....	....	90
Cambridgeport, Mass	§1 50@1 60	....	1 30
Derby	....	1 60	....
Dighton	....	1 65	....
East Cambridge	1 60§	....	§1 30
Fall River	1 50	1 60	90
Hackensack	....	....	....
Hallowell, Me	....	....	....
Hartford	1 75	2 40	1 30
Hoboken	†85	1 30	40
Hudson	....	1 65	....
Jersey City	....	1 30	40
Lynn, Mass	†1 95	.. ..	†1 30
Middletown	....	....	1 00
Mystic	....	....	....
Newark	....	....	....
New Bedford	1 35	1 65	90
Newburyport	1 65	1 80	1 45
New Haven	*85	1 55@1 60	90
New London	1 45	1 60	85
Newport	1 35	1 45	90
New York	85††	‖1 35@1 40	40
Norfolk, Va	85	60	....
Norwalk	1 45‡	1 60	80
Norwich	1 50‡	1 65	90
Pawtucket	1 65‡	1 65	‡100
Philadelphia	....	80	....
Portland	1 60	1 70	1 30
Portsmouth, N. H.	1 85	1 80	1 45
Providence	1 50	1 60	90
Petersburg, Va	....	90	....
Portsmouth, Va	....	....	....
Poughkeepsie, N. Y.	*85	1 50	....
Richmond, Va.	90	70	....
Rockport	....	....	....
Saco	2 00	....	....
Sag Harbor	....	....	1 00
Salem, Mass	1 65	1 70	1 30
Salisbury Pt., Mass	....	....	1 50
Savannah, Ga.	....	1 50	....
Stamford	*85	....	90
Stonington	....	....	....
Taunton	.. .	..	1 30
Trenton, N. J.	....	....	....
Troy	...	....	....
Warren, R. I.	....	....	90
Washington, D. C.	1 10	....	....
Wareham	....	1 65	....
Weymouth	....	1 80	....
Wilmington, Del	....	85	....
Wilmington, N. C.	....	1 50	....

* And discharging and towing. † And discharging.
‡ And towing. § 3c. per bridge extra.
‖ The rate to this point by barge is $1 65.
†† Afloat.

From Philadelphia to all places on the Hudson River the rate is 85c., and discharging and towage according to destination.

Freight on Nova Scotia Coals.

Pictou, Nova Scotia, to	New York		$1 80
" " "	Portland, Me		2 00
" " "	Montreal, Canada		2 35
" " "	Quebec. "		1 80
" " "	Halifax, N. S.		1 25

Pilotage for vessels of from 80 to 150 tons, $6 inward and $4 outward. From 150 to 1000 tons, 10 to $17 inward and $6 to $12 outward. Vessels of 1000 tons and upwards, 2c. per ton inward and 1½c. per ton outward.

Towage 3c. per ton. Trimming 3 hatch vessels, 6c per ton. Two hatch vessels 7c. per ton.

Delaware and Raritan Canal.

Tolls and Steam Towage.

Per 2240 lb. Cargoes to exceed 110 tons.

From Fairmount to	New York,	towing limits within 53d st.	74c.		
" Greenwich	"	Bituminous	64c.		
" "	"	Anthracite	69c.		
" Lambertville	"	Anthracite	62c.		
" Port Richmond	"		68c.		
" "	"	Semi-bituminous coal,	63c.		
" Philadelphia	"	Cumberland	"	58c.	
" Trenton	"	Anthracite	"	37c.	

Towing.

From foot of 23d Street, East River, and *return*, *per ton*.

	cts.		cts.
Bridgeport, Conn	33⅓	New Haven and Norwalk, Conn	33⅓
Hartford and Stonington, Conn	75	New London, Conn	60
Norwich, Conn	68	*Derby, "	3 ⅓
Stamford, Conn., per boat	$75	Harlem, N. Y., per boat.	$18
Whitestone, L. I.	$30	Glen Cove, L. I.	50

	cts.
Manhattanville, via Hudson River per ton	8
Harverstraw and Peekskill, via Hudson River	16
West Point and Cold Spring " "	17
Rondout " "	23
Yonkers, boats of 100 tons capacity " "	per boat. $5
Sing Sing and Peekskill " " "	20

* $50 per boat extra is charged for towage to this point.

Boats having less than 200 tons will be charged the same to Eastern points as if carrying that quantity.

THE BRITISH COAL AND IRON TRADES.

LONDON, Oct., 23 1875.

THE IRON TRADE.

The demand for pig iron for shipment is falling off, as is the case with the home demand, and prices are declining in consequence. The demand for finished iron is very light, and the prices are in most cases unremunerative. Some mills are already stopped for want of orders, while others see no indication of sufficient demand to enable them to continue work during the winter months. On the whole, the out-look is a very gloomy one. The shipments of iron from South Wales show an increase, but this is only an attempt of some of the companies to fill their orders for certain ports that will soon be closed.

The following are the leading quotations of iron:

	Tees, f.o.b.	Barrow, f.o.b.	Liverpool, on trucks.
No. 1 Pig	56/	*80/	70/6
No. 2 "	53/	*77/6	....
No. 3 "	51/	*75/	68/
No. 4 Forge	49	74/	65/
Common Bars	145/@147/6		162/6
Rails	130/@135/		140/@145/

* Bessemer Pig.

Common bars in South Staffordshire. £7 17/6, and marked bars, £10—12/6 extra for Lord Dudley's. Iron rails in Wales £6 10/@£6 15/, and bars £7 10/; Steel rails, £9 a £9 10/. Steel rails at Liverpool and on the East Coast, £9 10/@10 10/.

THE COAL TRADE.

The approach of winter brings with it an active demand for household descriptions, but manufacturing coals are very quiet, with indications that there will be no improvement during the winter months. Tyne coals are quoted f. o. b. as follows: steam, 10/6d.@14/; households, 11/@15/; and gas coals, 8/6d.@10/. Hetton gas coal f. o. b. Sunderland is quoted at 10/6d; common steam coal f. o. b. Liverpool, 10/; South Wales coals f. o. b. Cardiff, as follows: best double screened steam coal, 12/9d.; colliery screened, 11/3d.@12/; household, 10/; coke, 14/6d.@16/.

THE LABOR MARKET.

Work was resumed at the iron ship-building yard of MESSRS. RICHARDSON, DUCK & Co., of South Stockton, on the 18th inst., at a reduction of 7½ per cent., after a stoppage of three months.

MR. MACDONALD'S resignation of his position in the South Wales Conciliation Board has been accepted by the men. The masters have fixed upon the 27th inst. as the first day's sitting of the Board. A Central Welsh Union, to act in federation with the National Miners' Association, is to be formed.

The facts in the case between the Warwickshire miners and the masters have been laid before the arbitrators, who failed to agree. The question is to be decided by MR. SERJEANT WHEELER, the umpire. It is expected that he will render an early decision.

THE business of the National Trades' Union Congress was brought to a close on Saturday. It was resolved that the next congress should be held in Newcastle. A resolution was adopted expressing astonishment at, and condemning, the Government slave circular as a violation of the British Constitution, and demanding its immediate and definite withdrawal. A motion was also agreed to recognising the great advantages of co-operation, and recommending the fostering of its principles by all the trade unions in the kingdom. The congress also resolved in favor of international arbitration; and another resolution was adopted declaring that no one should be allowed to take charge of steam machinery without a certificate of competency, granted by examiners appointed by the Board of Trade, similar to those granted to marine engineers. The congress also expressed its opinion in favor of the equalisation of the franchise. Votes of thanks to the chairman and others concluded the proceedings.

BLAST-FURNACE ACCIDENT.

An accident occurred at the works of the Walsall Iron Company, on Friday afternoon, by which fifteen persons were burnt, through the bursting of a tuyere of a blast

furnace. The molten metal from the furnace was being run into the pig beds in front when the tuyere burst, and the ashes and molten metal were sent in a thick shower over the men, who were all standing within a few yards of the furnace. MR. JOHN HOLDSWORTH writes to the *Times* from Westbourne Ironworks, Stockton-on-Tees:—"Seeing an account in the *Times* of the 16th inst, of another blast-furnace accident in Staffordshire, arising from defective tuyeres, I think it is high time attention was called to the lamentable want of knowledge displayed by some blast-furnace managers in that district; the accidents are owing to the use of the old water tuyere, which is very dangerous. In the Cleveland district they have been entirely discarded for many years, and only the coiled tuyere is used. During upwards of twenty years there has not been a single accident arising from coiled tuyeres exploding."

SCOTLAND.

THE IRON TRADE.

Their has been a little more doing in warrants during the week, although the demand for makers' brands has fallen off. Warrants ranged during the week from 60/6d. to 61/10½d. and closed yesterday at 60/6d. Stocks are accumulating in makers' yards, while in CONNAL & Co's. stores they were reduced 1048 tons during the week, and are now 73,137 tons, as against 17,118 tons, October 22, 1874. There are 116 furnaces in blast now as against 119 a year ago. The present make per week is about 19,000 tons. The shipments for the week ending October 16, were 9723 tons, against 10,140 tons for the corresponding week of 1874. The total shipments since December, 25, 1874, have been 445,761 tons as against 375,079 tons for the corresponding period of 1873-74, or again this year of 88,632 tons. Makers' brands of No. 1 iron are quoted as follows: Gartsherrie, 70/; Coltness, 75/; Summerlee, 67/6d.; Langloan, 75/; Monkland, 63/; Glengarnock, 68/6d.; and Eglinton, 63/. Freights are as follows: To New York, 2/6d.; Boston, 14/; New Orleans, 5/; Baltimore, 8/; Philadelphia, 10/; and San Francisco, 27/6d. Machinery, pipes, etc., are in fair request, but the manufactured-iron trade is very dull.

THE COAL TRADE.

House coals are in very good request, but other descriptions are difficult of sale. House coals have been advanced 6d. The wholesale prices of coals are as follows: Household, 8/6d @10/6d.; Wishaw Main, 7/6d.@8/; Steam, 8/9d.@10/; Splint, 8/3d.@8/6d.; and Smithy, 14/. The increasing dullness in the coal and iron trades has had a tendency to deter the miners in pressing their claims for an advance in wages.

IRON MARKET REVIEW.

New York.

FRIDAY EVENING, Nov 5, 1875.

American Pig.—The Thomas Company report sales of 300 tons of No. 1 foundry at $24, and 600 tons of No. 2, at $22. There is constantly something doing in a small way, but upon the whole, the market is exceedingly quiet, with no encouraging prospects for the early future. Known brands are very firm at $24 for No. 1; $22 for No. 2, and $19@20 for forge. Some brands not well known, and perhaps of inferior qualities, are reported to have sold as low as $23@23 50 for No. 1, while at the same time we hear of sales of good brands at $25. In the latter case, consumers felt that the brands they were purchasing, were worth the difference for the purposes for which they desired to use them.

Scotch Pig.—There have been sales of 150 tons of Eglinton at $29 50, and 200 tons of Coltness, at $32 50@33. There is but little to be said relative to this article. The arrivals are light, and the demand small. We quote Coltness at $33; Gartsherrie, $32 50; Eglinton, $29 50@$30.

Rails.—There has been no further business transacted since our last, although negotiations are in progress which look as though they might result in business. We quote iron rails at mills, at $45@50, and steel at $70.

Old Rails.—A sale of a small lot is reported to have taken place at $26, which is the nominal quotation today.

Scrap.—We note a sale of 300 tons of No. 1 wrought scrap at $31, with 500 tons now offering at the same figure. Some lots are quoted $32.

Philadelphia, Pa.

Weekly report of the Philadelphia Iron Market, furnished by Messrs. JUSTICE COX & Co., Iron Merchants, 333 Walnut street, Philadelphia. Week ending Nov. 5, 1875.

American Pig.—The near approach of the close of navigation fails to affect the market beyond the wants for the day-to-day consumption, and prices are weaker than at our last. The action of the Thomas Company has compelled most of the Lehigh Companies to follow, whilst some hold firm to $25, and get it. In fact, when parties are using an iron and like it, a dollar or two does not bring the order, and as all orders are small at this time, there is about as much sold at $25 and $23 for No. 1 and 2, as at $24 and $22, the price the Thomas Co. quote. $24 is bottom for good No. 1, even many thinking it the bottom that will be reached this year, as all but the Thomas hold so firm to $25.

Mill Iron.—The starting of the mills in this neighborhood has made some demand for pig iron. Now that they have succeeded in getting their puddlers to work at the reduction, it is hoped they will combine to work without interruption this winter. We quote $21 50@23.

Scrap.—Some scrap is offering at $30@32. Old car wheels are quoted at $20@22, according to make.

Bar iron is quoted at $2 40@2 50.

New Rails.—Some orders for 35 lb. T. have been placed this week at $47. We quote $45@50.

Old Rails are quoted at $26@26 50.

Baltimore. Nov 3, 1875.

Specially reported by Messrs. R. C. HOFFMAN & Co.

The iron market remains dull, and transactions light. We quote:

Baltimore Charcoal	$32@35	Anthracite No. 2	$21@22
Virginia Charcoal	31@34	Mottled and White	19@20
Anthracite No. 1	25@26	Charcoal C. B Blooms,	70@75
" No. 2.	23@24	Refined Blooms	60@65

Boston. Oct. 30, 1875

PIG presents no encouraging features for holders. The same elements of ease are at work that have been previously alluded to. Prices here have no particular point, although $26 for No. 1 foundry of leading brands is the current quotation for large or small lots laid down on our wharves. The other qualities range along in a nominal way, buyers being utterly indifferent, and the lowest point is touched on gray forge at $20, at which value even a small lot has been offered in the market.

BAR is moving along, but somewhat in an irregular way again, some dealers quoting refined at $62, and others at $58, and thence fractionally down to $57, while one or two quote warranted bar at $56, and first-class out-of-town buyers naming names and brands where $55 50 is the selling value. All this is rather confusing to the careful editor, but the facts are undeniable.

STEEL has been rather quiet this week, with prices nominally steady, and stock not over large.

We quote American tool, 14@15c.; American machinery, 9@9½c.; Bessemer tires, 7@7½c.; Sweet's Excelsior tire, 8½@12c.; English tool, 16@18c., gold.

COPPER is without improvement, and holders have been offering November and December deliveries at 23c. This also covers the quotations on spot lots, a reduction of from ¼ to ½c., since our last. For manufacturers we quote new sheathing 30c.; bolts and braziers 31c.; yellow metal bolts, 20@29c.

LEAD is very dull, with prices easier. We quote pig 5¾@5¾c. for domestic, and 6¼@6½c. for foreign; tin-lined pipe 16½c.; bar lead, 9c., less usual trade, or 10 per cent. discount.

ANTIMONY is firm, with a slight request, quoting at 13¼c.

SPELTER is strong and dull at $7 45, 30 days, and $7 35, prompt cash, all currency. Silesian is having a trivial business at $7 30.

TIN still holds heavy and unchanged, buyers and sellers apart, without any peculiar interest with either party, though possibly holders are more disposed to meet buyers than a week ago. We quote Straits 19¼c.; Banca, 24c.; Refined English, 19¾@20c., gold. Plates are active; we quote charcoal I. C., $7 25@7 75; coke, $6 50@$6 75; and Terne at $6 15@6 50, gold.—*Commercial Bulletin.*

Cincinnati. Nov. 2, 1875.

Specially reported by Messrs. TRABER & AUBERY, commission merchants for the sale of pig iron, blooms, ore, etc.

Below please find the closing quotations of our pig iron market, viz:

CHARCOAL.

Hanging Rock, No. 1 Foundry	$25 00@26 00	—4 mos
" No 2, "	23 00@24 00	—4 mos
" Mill	22 00@	—4 mos
Tennessee No. 1, Foundry	24 00@24 50	—4 mos
Tennessee, No. 2, "	23 00@23 50	—4 mos
" Mill	22 00@	—4 mos
Missouri, No. 1, Foundry	@	—4 mos

STONE COAL.

Ohio, No. 1, Foundry	23 00@23 50	—4 mos
" No. 2, "	22 00@22 50	—4 mos
Ohio Mill	21 00@00 00	—4 mos
Missouri, No. 1 Foundry	27 00@28 00	—4 mos
" No. 2, "	26 00@27 00	—4 mos
" Mill	26 00@27 00	—4 mos

CAR WHEELS.

Hanging Rock, C. B	40 00@30 00	—4 mos
Tennessee "	30 00@35 00	—4 mos
Missouri "	34 00@37 00	—4 mos
Alabama "	30 00@35 00	—4 mos

BLOOMS.

Charcoal	60 00@ 80 00	—cash

SCRAP IRON.

Cast	50c.@ 65	—cash
Wrought	1 00@1 25	—cash

Louisville. Nov. 2, 1875.

Specially reported by Messrs. GEORGE H. HULL & Co.

The consumers of pig iron, with the exception of car wheel foundries, are full of work. The stock of choice number one foundry is nearly exhausted and there is more demand for that grade. The usual time, four months, is allowed on the quotations below.

HOT BLAST—CHARCOAL.

No. 1 foundry, from Hanging Rock Ores	$25 00@26 00
No. 2 " " "	23 00@24 00
No. 1, Mill, from " " "	—@—
No. 1, foundry, from Alabama, Georgia and Tennessee ores	23 00@24 00
No. 2, foundry, from Ala., Geor'a and Tenn. ores	22 00@23 00
No. 1, Mill, from " " " " "	21 00@22 00

HOT BLAST—STONE COAL AND COKE.

No. 1, foundry, from Hanging Rock ores	23 00@24 00
No. 2, " " " " "	22 00@23 00
No 1, Mill, " " " " "	21 00@22 00
No. 1, foundry, from Ala. Ga. and Tenn. ores	23 00@24 00
No. 2, " " " " "	22 00@23 00
No. 1, Mill, " " " " "	21 00@22 00
No. 1 foundry, from Missouri ores	24 00@25 00
No. 2 foundry, from Missouri ores	24 00@25 00
No. 1 Mill, from Missouri ores	25 00@26 00

COLD BLAST—CHARCOAL.

Car Wheel from Hanging Rock ores	35 00@40 00	
" " Tennessee "	28 00@30 00	
" " Alabama and Georgia ores	28 00@38 00	
" " Kentucky ores	28 00@40 00	

Pittsburgh. Nov. 3, 1875.

Specially reported by A. H. CHILDS, Esq.

The metal market remains in the same depressed condition as noted in last report. Although there seems every probability of effecting a satisfactory arrangement, as far as the puddlers are concerned, yet the manufacturers find but little inducement to buy largely in the present state of the trade. Quotations are:

No 1. foundry	$25 00@26 00	—4 mos
" 2. "	24 00@25 00	—4 mos
Gray forge	23 00@24 00	—4 mos
White and mottled	20 00@22 00	—4 mos
Hot blast charcoal	25 00@30 00	—4 mos
Cold blast charcoal	30 00@35 00	—4 mos

PIG IRON.—Trade in this important article has almost come to a dead halt; there was less done during the past week than any preceding week since the lock out; the reported sales having been unusually small. The mills generally are virtually out of the market, as but few of them are working more than half time, they do not require much, and only those who, from sheer force of necessity, are compelled to, are buying at all; there is not one-third the quantity of the raw article changing hands that there usually is at this particular time. As compared with last week, prices are without quotable change. Some choice brands of mill iron are still held at $4, 4 mos., but the most of the sales within the past few works have been at $23 to $25 50, and we believe that $23 approximates closer to the real market value than $24, although there are some holders who are unwilling to accept a fraction less.

MANUFACTURED IRON.—The general position of the market for manufactured iron remains substantially as noted in our last report; the most important feature to notice is the agreement of the puddlers to a reduction of 50c. per ton. It is also worthy of notice that within the past few weeks there has been a shrinkage of from 50c. to $1 per ton in the value of the raw article, so that the actual cost of manufacture has been reduced $1 to $1 50 per ton. While this reduction in the cost of production places our manufacturers in a better position, it is feared that the result will be a further reduction in selling prices, and if so, it will be of no decided advantage, and, furthermore, the irregularity in prices will have a tendency to curtail the demand. Quotations may be given on a basis of $2 20@2 30, 60 days, for bars

STEEL.—There is really no new or important feature in this branch of business; trade continues to keep up as well, if not better, than could reasonably be expected. The mills are all in operation, although few, if any of them, are working up to their full capacity, and it is still complained that current rates have been shaved so very close that they afford little or no margin for profit.

PIG METAL SALES REPORTED FOR THE AMERICAN MANUFACTURER FOR THE WEEK ENDED OCTOBER 30, 1875.

BITUMINOUS COAL OR COKE, SMELTED FROM L. S. ORE OR L. S. AND NATIVE

60 tons No. 1 foundry	$26 00	—1 mos.
100 tons gray forge extra	25 00	—4 mos.
50 tons gray forge	23 50	—1 mos.
330 tons gray forge,	23 00	—4 mos.

CHARCOAL.

115 tons Nos. 1 and 2 foundry, H. B.	P. T.
80 tons cold blast	P. T.

—*American Manufacturer.*

Richmond, Va. Oct. 30, 1875.

Reported by ASA SNYDER, Esq.

Virginia Cold Blast Charcoal Pig Iron					$30 to $35
" Warm " " " "					28 to 32
" " " Coke " "				1 X	26 to 27
" " " " "				2 X	25 to 26
" " " " "				3	24 to 25
" Authracite 1 X					27 to 29
" " 2 X					26 to 27

San Francisco, Cal.

From the *Commercial Herald*, of October 21, 1875.

The imports of Scotch and English Pig Iron are surprisingly large, causing a great increase of stock and depressing prices to low rates. The *Gilroy*, from Glasgow, reports 1,900 tons; the *Greta*, from same, 600 tons. We note sales of 500 boxes terne tin plate at $10; 40 casks sheet zinc, 9¾c. It is some time since any "Selby" pig lead has been shipped to New York or elsewhere; in fact none made since the death of THOS. H. SELBY, the smelting works only cleaning up. June 20th the *Carrier Dove* carried 40 tons "Selby" and July 3d the *Black Hawk* had 138 tons "Selby." Since then, the *Gen. McClellan* has cleared with 40 tons XXX. All other shipments made were from the Eureka mines—"Richmond" brand. One-half of the Selby Smelting Works, belonging to the estate of PETER NAYLOR, was sold last month to FLOOD & O'BRIEN, and unless they buy soon the remaining half belonging to the Selby estate, it is probable that the smelting works will resume operations November 1st, when shipments of the "Seldy" brand will again be in order. The trade have reduced the discount on bar iron 5 per cent. on lots of 5 tons, and 10 per cent. on lots of 10 tons and upward. The stock of pig iron is excessive, having been largely increased by recent arrivals. The spot price for Scotch is $33@36; the same, to arrive, $32@33. The demand for tin plate is surprisingly small and quotations are entirely nominal.

St. Louis. Nov. 2, 1875.

Specially reported by Messrs. SPOONER & COLLINS, Commission Agents for all kinds of Iron.

Little or no change is noticed in the condition of our market. The demand is perhaps falling off a little, as it usually does at the approach of winter. Prices rule low.

BITUMINOUS.

Missouri, No. 1	$27@28	Massillon A No. 1	$35@36
" " 2	$25@26	" B " 1	$33@34
" " 1 Mill	$24@25	" " 2	$32@33

CHARCOAL—HOT BLAST.

Missouri, No. 1	$27@28	Tennessee, No. 1	$26@27
" " 2	$25@26	" " 2	$24@25
" Mill	$24@25	" Mill	$23@24
Hanging Rock, No. 1	$28@29	Georgia, No. 1	$28@—
" " " 2	$26@27	" " 2	$26@—
" " " 3	$25@26	" Mill	$24@—

CHARCOAL—COLD BLAST.

Missouri Car Wheel	$33@35	Tennessee " "	$33@35
Alabama " "	$33@35	Hanging Rock "	$50@53

MISSOURI BLOOMS AND BILLETS.

Charcoal Blooms	$75@85	Hammered Billets	$ 0@100
Scrap "	$70@75		

Sundry Quotations.

Fire Brick per 1000 (B. KREISCHER & SON)	$40@45@50 00
Clay retorts 12x20@15@30	30@45 00
Tiles and blocks per 100 cubic inches	12
Ground clay per bbl	2 50
" brick "	4 00
Rosedale cement per bbl	$ 1 15@ 1 20
Portland " "	3 50@ 4 25
Roman " "	3 50@ 4 25
Keene's coarse cement per bbl	8 00@ 8 50
fine " "	12 00@12 50

METALS.

NEW YORK, Friday Evening, Nov. 5, 1875.

There is a very fair amount of business doing in a jobbing way, although there have been no authenticated transactions in a large way. Cable advices report considerable regularity to prices in London.

Gold Coin.—During the week past gold has ranged from 114⅞@116¼, and closed at 115¼.

Bullion.—Fine silver bar is quoted at $1 22½@1 23½, gold, per ounce, and fine gold bar at par ($20 67 gold, per ounce,) to ¼ per cent. premium.

Messrs. JAMES & SHAKESPEARE, of London, under date of October 22, say: "Owing to the continuous drain of gold for Germany, the bank has been compelled to raise its rate to 4 per cent.; but the demand for money for commercial purposes is still very light, and, judging from the limited trade doing in metals, we doubt if business was ever (except in a time of panic) conducted on so small a scale, as is the case at the present moment. No manufacturer seems to care to hold stocks, or to purchase beyond what suffices for a week or fortnight's consumption; and, as speculation is almost entirely absent from our market, the transactions are not of sufficient importance to cause anything beyond trifling fluctuations in our list prices. Spite of all this depression, the actual requirements are of such magnitude as to fully absorb the quantities of metal imported; and, finding this to be the case, holders cannot be induced to make any notable concession in their rates, even when by so doing they would tempt buyers to operate on a more extensive scale."

Copper.—The sales of spot copper during the week have been about 300,000 lb. at 23c.@23¼c. The asking prices to-day are 23¼c.@23½c. for Lake, and 22⅞c.@23c. for Baltimore. There is a rumor that 1,000,000 lb. Lake have been sold "short" during the week. This is believed in good circles, although we are unable to confirm it. The consummation of the purchase of the balance of the Mining Companies' stocks has not yet taken place, but is constantly expected. It is said that there are but little outside lots of copper in the market, and that stocks are strongly concentrated. Brass manufacturers are doing a better business than a short time ago, but continue to confine their purchases to immediate requirements. There are some foreign orders for ingot copper in the market, but we have been unable to learn of any transactions. Chili Bars were quoted, by cable, in London, yesterday, at £82 10/, and Best Selected was quoted, on the 30th ult., at £90.

ERNEST W. G. MURRANT ESQ., of London, under date of October 22, says of Copper:—Chili.—The cable telegram due on 17th instant, with charters from the West Coast had not arrived up to Wednesday night, but it was generally understood they were under 2,000 tons; they were wired yesterday as 1 400 tons. Considerable irregularity has been lately noticeable in the arrival of this cablegram, but on inquiry at Messrs. REUTER'S offices no explanation was given respecting it. One or two isolated lots of bars were sold as low as £82, but on Wednesday the importers refused to accept firm bids of £82 5/ for g. o. bs., and there were strong buyers here at about £82. An upward movement would create no surprise, as much firmness has been imparted to this market by the recent operations in Australian, resulting in the withdrawal of a heavy line, which was not long since being rather pressed for sale than otherwise. The gentlemen connected with the latter operation being of high standing and practically unlimited means, we may be sure the stuff has not passed into weak hands In bars, great reluctance has lately been shown to enter into contracts for forward delivery, and it is supposed the Bears' have had enough of it for the present. Furnace stuff is firmly held, and better prices are expected. The business reported consisted of 650 tons g. o. bs., and named brands at £82 to £83 for cash, and one three months' contract was passed at £83 for g. o. bs. Lots was sold at £82 15/ for arrival. Market closing firm."

Tin.—Outside of a fair jobbing business there is nothing doing. We quote Straits and L. and F. at 19½c.@19⅝c., gold; Refined, 19½c.@19¾c.; and Banca at 24c. Straits was quoted, by cable, in London, yesterday, at £86, and Banca, to-day, at £91. Singapore was quoted at $23¼ per picul, yesterday.

Messrs. JAMES & SHAKESPEARE say of tin: "English is quiet, but smelters will only make a slight concession from the official rates, as given in our list. Foreign sorts are in good demand, and prices have an upward tendency. The trade here is entirely confined to Australian and Straits; the former attracting most attention owing to its moderate value, and large sales have been daily made therein at 82/ 6d. to 83/ cash, whilst forward deliveries realized 82/ 6d. per cwt. The present imports of Australian are of a finer and more uniform character than the first parcels which came to this country, and many lots, recently to hand, are fully equal to fine Straits. Smelters on the other side of the world begin to recognize the necessity of sending a proper and suitable article, and they now turn out really pure stuff, cast into the required shape. Should they continue to exercise the same care, and ship to England only fine slab tin, there is every reason to believe that Australian produce will, ere long, command the same price as Penang metal."

Tin Plates.—A very fair jobbing business is doing, especially in cokes. We quote charcoal tins at $7 25@$7 37½, gold, per box, and ternes, $6 87½@$7; coke tins, $6 25@$6 50, and ternes, $6@$6 25, with prices very firm at these figures. Cable advices say that tin plates in England are very firm, and that makers refuse to quote, except at an advance on current rates. Plates for future delivery are only quoted at prices that may rule at time of delivery.

Messrs. ROBERT CROOKS & Co., of Liverpool, under date of October 21, say of tin plates: "A dull market since our last. Buyers appear to have supplied their immediate wants; and makers being well booked, will not make any concessions to stimulate business. On the whole, prices have hardened a little, and we have again to advance prices of a few brands. It is reported there is considerable inquiry for future delivery."

Lead.—This is as quiet as any article in the list. The sales during the week have not amounted to more than about 100 tons, at prices ranging from 5·62½c.@5·65c., the latter being the quoting price to-day of ordinary brands. Soft Missouri is quoted at 7⅛c., currency, at St. Louis, and ordinary, at 6½@6¾c., currency. Supplies from the far West are very liberal, with indications that such will be the case during the balance of the year.

Spelter and Zinc.—Domestic spelter is very quiet, at 7·40c., currency. There are rumors of sales at 7¼c., but we are unable to confirm them. Foreign is quoted at 7⅛c.@7¼c., gold. Sheet zinc is firm at 9c., gold.

Antimony is very firm, at 13¾c.@14c., gold, with a fair amount of business doing.

Quicksilver is quoted in this market at 77½c., and in San Francisco at 70c.@72½c., gold, per lb. London mail advices of October 22 quoted at £13 10/ per flask of 75 lb.

The San Francisco *Commercial Herald* of October 21, says: "The shipments to China per last steamer fell far short of the quantity expected, and much less than freight engagements promised ten days since. The clearances called for only 512 flasks. There have, however, been numerous shipments to London via Panama, although not so specified on the manifests. Thus far during the week, sales have been light, some 300 flasks only reported, in lots, at 77½@78@79@80c."

The exports for the past week have been as follows:

To	Flasks.	Value.
Mexico, per Constitution	500	$32,513
South America, per Constitution	50	3,060
China, per Oceanic	512	31,362
Totals	1,062	$66,935

FINANCIAL.

New York Stocks.

FRIDAY, Nov. 5, 1875.

The occurrence of the elections during the week under review has had the effect of engrossing a great deal of attention, which would otherwise probably have been devoted to speculation in stocks; consequently a very dull market is reported, fluctuations for the week being represented by scarcely a fractional variation from our last quotations.

The stock of the Mariposa Land and Mining Company is lower, and without sales. The tunnel, at last advices, was 1,241 feet long, heading direct for the Pine Tree Mine.

Mr. JAMES F. TRACY, Secretary and Treasurer of the Chesapeake and Ohio Railroad Company, has addressed a circular to the first mortgage bondholders, announcing the failure of the plan to fund the interests of those bonds, due Nov. 1st, on account of the depressed condition of trade during the past two years, and the non-compliance with the terms of the plan of the required number of bondholders.

Judge BOND of the United States Circuit Court, sitting with Judge HUGHES of the District Court, at Richmond, Va., has rendered his final decision in the case of the Chesapeake and Ohio Railroad, appointing HENRY TYSON, of Baltimore, permanent Receiver of the road in proceedings looking toward foreclosure.

The following is issued by the Maryland Coal Company:

Proposals will be received at the office of this company from the 1st to the 10th of November, inclusive, for the purchase of its First Mortgage Sinking Fund Bonds, for cancelation, for which purpose $10 000 have been deposited with the Farmers' Loan and Trust Company, Trustees.

S. T. ROSS, Treasurer.

At a recent auction sale in Pittsburgh, Pa., 1000 shares of the Columbia Oil Company sold at $5 45 per share.

Coupons on the bonds of the following companies, due Nov 1st, are payable in New York: Joliet Iron and Steel Company; Milwaukie Iron Company; Richmond, Va. Iron Mining Company (due Nov. 15th); Union Iron Company, of Buffalo, N. Y.; Warfield Coal and Salt Company; Wilmington Coal Mining and Manufacturing Company; Spuyten Duyvel Rolling Mill Company; St. Louis and Iron Mountain RR. Company; N. J. C. RR convt. bonds of 1902; D. and H. Canal Company (interest loan 1877); James River and Kanawha Canal Company. Coupons of this Company will be paid at Richmond, Va.

Bonds are dull and unchanged.

Quotations and Sales of Stocks and Bonds,

For the week ending Nov. 5, 1875.

STOCKS.

	Highest	Lowest	Closing	Shares sold.
Pennsylvania Coal Co	—	—	275	—
Consolidation Coal Co	48	47	48	410
Spring Mt. Coal Co	—	—	65¼	50
American Coal Co	—	—	50	—
Maryland Coal Co	—	—	16¼	700
Del., Lack., and West. RR. Co.	118⅝	118	118¾	1110
New Jersey Central RR. Co.	106	105¾	106	645
Delaware and Hudson Canal Co.	121¼	120	121¼	141
Quicksilver Mining Co. pref'd	23¾	22½	23½	400
" " " Common	18	17⅝	17¾	300
Mariposa Land & Min. Co. various.	—	—	8½	—
St. Louis & Iron Mountain RR.	—	—	14	300
Lehigh & Wilkes Barre Coal Co.	—	—	—	—
Total Shares sold				4056
Sales for the week previous				9650
Decrease				5594

BONDS.

	Sales.		Price
Ches. & O. R. R. 6s, 1st, coupon	—		— @ 29
" " " ex coupon	—		— @ 24
Central RR. of N. J. 1st Mtg.	6,000		— @112
" " " 1st Cons.	2,000		— @107
" " " Convt.	3 000		— @105¼
Del. and H. Canal, 1st Mtg. '94	3,000		— @107⅜
" " 7s, '84	1,000		— @111
" " Reg. '91	2,000	112	@112½
Del., Lack. & W. R. R., 7s, conv.	—		—@†120½
" " " " 2d Mtg.	—		— @112⅛
St. Louis & Iron Mount'n 1st Mtg.	—		— @ 93
St. Louis & Iron M'tn, 2d Mtg.	—		— @ 56†
Lehigh & Wilkes-Barre Cons.	5,000		— @ 96
Total Sales	$22,000		

Closing quotations, in the absence of sales, represent the latest prices bid.

† Asked.

Philadelphia Stocks.

PHILADELPHIA, Nov. 5, 1875.

The Philadelphia Stock Market has been generally steady during the operations of the week, with quotations slightly irregular.

The Pennsylvania R. R. Co. announces a quarterly dividend of 2 per cent., payable on and after Nov. 30th to stockholders, as registered on the books at 3 P. M., October 30th. This stock has been very active during the week, the sales amounting to over 45,000 shares, closing at 50½, dividend off.

At auction, on the 2d inst., 58 shares of the Allentown Iron Co. sold at 50½. Also, $5,000 Emaus Iron Co. First Mort. Con. 7s, guaranteed principal and interest by the P. & R. R. R. Co., at 87½. Also, 10,000 Danville Hazleton & W. B. R. R. Co. 1st Mort. Con. 7s at 26½. The Morris Run Coal Company of Pennsylvania has filed a claim for over $350,000 against the Moisic Iron Works of Montreal, Canada, who have recently suspended with liabilities said to be large.

BURTON BROTHERS, coal operators at Mt. Carmel, Pa., have suspended with liabilities amounting to $200,000.

The trustees of the 2d Mortgage Bonds of the Cumberland and Pennsylvania R. R. Co. announce that they will receive proposals for the surrender of the 2d Mortgage Bonds of their Company to the amount of ($20,000) twenty thousand dollars, in cash, for the Sinking Fund, at the offices of the Company, up to 12 o'clock, noon, on the 10th of November.

Coupons of the bonds of the following companies are due and payable in Philadelphia on and after November 1st: D. & R. Canal Co. (coupons paid by P. & R. R. R. Co.), Karthaus Coal & Lumber Co., L. Coal & Nav. Co. (interest on the 1st Mort. Reg. Bonds), Pa. & Ohio Bridge Co., Union Canal Co., 1st Mort. Bonds.

Meetings of the following Companies occur at the dates annexed: Clinton Coal & Iron Co., November 3d; Lester Oil Co., November 9th; Ocean Oil Co., November 6th.

Quotations and Sales of Stocks and Bonds.

For the week ending Nov. 5, 1875.

STOCKS.

	Highest	Lowest	Closing	Shr's
Lehigh Valley RR. Co	62⅝	62	62⅝	372
Pennsylvania RR.	51⅛	50⅛†	50⅜	45300
Reading RR.	50⅜	50⅜	50⅛	2828
Lehigh Coal and Nav. Co	50⅞	50⅝	50¾	2235
Buck Mountain Coal Co.	—	—	—	—
Fulton Coal Co.	—	—	3½	—
Locust Mountain Coal Co	—	—	—	—
Westmoreland Coal Co.		—	80	—
St. Nicholas Coal Co.	—	—	1	—
Cambria Iron Co.	—	—	16¼	32
Crane Iron Co.	—	—	—	—
Emaus Iron Co	—	—	—	—
Pennsylvania Salt Manufact. Co.	77¼	77	77	218
Total shares sold				50,985
Sales for the week previous				30,484
Increase				20,501

†Ex Dividend.

BONDS.

	Sales.	Price
H and B. T. RR. 1st mortgage, 7s	—	— @104
" " " 2d " "	—	— @104
" " " 3d " cons	—	— @ 52
Lehigh Valley RR. 6s, Con	2,000	— @105⅛
" " " 7s, 1910	3,000	— @109⅜
" " " con. mtge. 6s reg	9,300	99¾@ 99¾
Pennsylvania RR. 1st mtge. 6s	—	— @104
" " gen. " reg. 1910	10,000	— @101¼
" " gen. " 6s, cou	—	— @101⅜
Phil. & Reading RR. 6s,	—	— @104
" deb. bonds.	3,100	81 @ 80½
" " " G. M. 7s, cou. 1911,	—	— @108⅛
" " " " 7s, Reg	3,000	— @109¼
" " new convertible 7s '93	3,000	108¾@108½
Phil. & Reading C. & I. Co. 7s deb. '92	—	— @ 82½
" " " 6s	—	— @ 91⅛
Lehigh Coal & Nav. Co., 6s '84	3,800	— @101¾
" " " RR., '97	5,600	101 @†100½
" " " '77	—	— @ 96½
" " " conv. gold '82	7,000	104 @103⅞
" " " gold, '97	—	— @104¼
" " " Reg.	2,000	— @106⅛
Penn. Canal, 6s	2,000	— @ 70
Penn. and N. Y. Canal, 7s	—	— @107
Susquehanna Coal Co. 7s	—	— @ 70
Buck. Mount Coal Co. 6s	—	— @ 97½
Total amount of sales	$53,800	

† Ex Interest.

Closing quotations, in the absence of sales, represent the latest prices bid.

Gold and Silver Stocks.

NEW YORK, Nov. 5, 1875.

The National Gold Bank and Trust Company, of San Francisco, suspended payment on Monday last, after sustaining a severe run on the Saturday previous. The bank had been considered weak since the failure of the Bank of California, paying only their small depositors in full, and obtaining extensions on the larger ones. The President of the bank has notified the Comptroller of the Currency at Washington, that it will go into voluntary liquidation under the provisions of the National Bank Act. The Assistant Treasurer at San Francisco has been instructed to redeem the notes of the company, to the amount of $340,000, bonds for the security of that amount being deposited in the Treasury.

This failure, and, more particularly, discouraging reports from the bonanza mines, have had the effect of depressing mining stocks, a decline ranging from $1 @ $6 per share having occurred in nearly all of the principal quotations.

It is stated that with the new material now at command, the Consolidated Virginia mine will be working as usual in thirty days, and the usual dividend will be paid from the bullion already turned out, and the surplus on hand. There is now no trouble from gas, fire, or any appreciable amount of water in the Consolidated Virginia, California, Ophir, Gould & Curry, Hale & Norcross or Savage mines, the reservoir tapped in the Consolidated Virginia, which caused the flood, having exhausted itself.

The bullion shipments of the Consolidated Virginia mine for the first twelve days of October, and prior to the fire, amounted to $1,009,999, being the largest amount ever produced by that or any other mine in this country within the same length of time. At the time of the fire this company was producing gold and silver bullion at the rate of $30,000,000 per annum, and the Ophir at the rate of $5,000,000 per annum.

The Ophir Company have made arrangements with the Chollar-Potosi Company for the use of the engines and hoisting works of the latter, and they will be put in position at once. It is confidently expected that the work of hoisting ore will commence in about twenty days.

The Empire Mining Company, of Idaho Territory, has levied an assessment of 50 cents per share, amounting to $12,500, delinquent November 29th.

MINING NOTES

The Chollar Potosi mine produced 300 tons ore, containing $9,350 in gold and silver bullion, during the week ending October 23, which is equal to an average assay value of about $31 10 per ton. The Imperial mine shipped $4,351 bullion, October 26, and the condition of the underground works continues to improve. The Eureka gold mine, at Grass Valley, yielded 325 ounces of amalgam the last weekly report, and had 112 tons of ore on hand. The New York gold mine is producing ore unusually rich from the 500-foot level, where the vein is three feet thick. The Baltimore Consolidated mine, which for a long time had barren ground, took out 20 tons, October, 23, from the 450 foot level, which yielded $400 in gold and silver to the ton.

The Ophir mine shipped, October 23, $43,797, and the Imperial Empire, $2,225 in bullion. The Raymond and Ely bullion shipment for the week ending October 16, was $31,636. The Leopard mine shipped, October 19, $3,915, and on the 21, $7,900. The Humboldt shipped, October 23, $1,200 in bullion.

New mills are building at Central City, Colorado, for treating gold ores from the Bobtail and other mines. When completed they will be the largest in Colorado, and will contain over 100 heads of stamps, in sections of 25, run by large steam engines.

The silver mines on Democrat, Douglas and Leavenworth mountains, Colorado, show an increased yield over last year, and the ores continue to grow steadily richer as depth is gained. The ores are principally composed of galena, zinc-blende and sulphurets, and the country rock is coarse-grained granite.

The main shafts of the Dayton, Baltimore Consolidated, American Flat, Mexican, Europa, Lady Bryan, Sierra Nevada, Chollar Potosi, Mint, North Chipman, Silver Hill, Caledonia, Amazon, and North Consolidated Virginia mines are progressing without interruption.

The Sutro Tunnel, October 21, was 11,200 feet long, in soft and dangerous ground.

The Commissioner of the General Land Office to-day decided the case of the Bowman silver mining company, the Marshall mining company, and the owners of the Colorado Central lode, against the Equator mining company, rejecting the several adverse claims and protests, and allowing the Equator company to proceed with their applications for patent. The property in dispute is near Georgetown and is considered of great value.

The business of the United States Assay office at New York during October has been as follows: Deposits of gold—Foreign coin, $450,000; foreign bullion, $140,000; United States bullion, $405,000: United States re-deposits, $65,000; jewelers' bars, $50,000; total, $1,110,000. Deposits of Silver—Jewelers' bars, $12,000; foreign coin, $12,000; foreign bullion, $8,000; United States bullion, contained in gold, $5,000; bullion, Colorado, $310,000; bullion, Lake Superior, $50,000; bullion, Montana, $2,000; bullion, Nevada, $60,000; bullion, New Mexico, $28 500; bullion, Utah, $18,000; total, $505 500. Total deposits, $1,615, 500. Gold bars stamped, $436,480 83; silver bars stamped, $437,597 50; total, $874.078 33. Transmitted to the United States Mint, Philadelphia, for coinage—Gold, $1,798,658 77; silver, $36.957 50; total, $1,835,616 27.

QUOTATIONS:

	No. of shares.	Oct. 27.	Nov. 2.
Sierra Nevada	100,000	$13	13
Union Consolidated	100,000	8	8
Mexican	108,000	17	17
Ophir	108,000	42	39
California	540.000	56	55
Consolidated Virginia	108,000	261	260
Best & Belcher	100,000	41	39
Gould & Curry	103,000	19	17
Savage	16,000	74	70
Hale and Norcross	16,000	42	36
Chollar Potosi	28,000	69	64
Alpha Consolidated	30,000	17	18
Imperial	100,000	10	10
Yellow Jacket	24,000	74	70
Kentuck	30,000	13	13
Crown Point	100,000	27	30
Belcher	104,000	17	20
Overman	38,400	47	48
Caledonia	20,000	16	17
Raymond & Ely	30,000	24	28
Meadow Valley	60,000	4	4
Eureka Consolidated	50,000	14	12
Eureka G. V.	20,000	—	—

Copper Stocks.

Specially reported by WILSON W. FAY & CO., Bankers and Brokers, room 7 Traveller Building, 31 State street, Boston.

BOSTON, Thursday Evening, Nov. 4.

The Copper Stock Market remains in the same condition as previously reported. The sales of the week have been, Allouez at 14¼, Quincy at 41.00, Calumet & Hecla at 159¼ @160, Franklin at 13.00, Mesnard at 50, and Humbolt at ¼. The Franklin and Pewabic will have a large product this month. The Franklin Stamp Mills, when the improvements are completed, will be among the best appointed ones in the country. During a heavy gale a portion of the upper structure of the Silver Island Crib was carried away.

DESCRIPTION.	Par Value.	No. of Shares.	CLOSING. Bid.	Asked.
Allouez	$50	20 000	$14¼	$15
Calumet and Hecla	25	80,000	159¾	160
Central	25	20,000	33 00	33 50
Copper Falls	25	20,000	6 75	7 00
Dana	25	20,000	.15	20
Duncan Silver	20	60,000	53	57
Franklin	25	20,000	12 50	13 00
Humboldt	25	20.000	25	30
Madisca	25	20,000	25	30
Menard	25	20,000	50	55
Minnesota	25	20,000	2	2¾
National	15	20,000	2 25	2 75
Petherick	25	20,000	65	75
Pewabic	25	20,000	5¼	5¾
Phenix	25	20,000		
Quincy	25	20,000	40 50	41 00
Ridge	25	20,000	6 25	6 50
Rockland	25	20,000	45	50
Silver Islet	—	—	10 00	20 00
Star	25	20,000	25	35
Superior	25	20,000	15	20

Gas Stocks.

NEW YORK, Nov. 5, 1875.

Gas Stocks have been very quiet during the week under review, and but few changes are made in our quotations. The only transaction reported worthy of note is a sale of 200 shares of the Citizens' G. L. Co. of Brocklyn at 155½. We also note sales of the People's Gas Light Co. of Baltimore, Md., aggregating about 100 shares for the week, at the Baltimore Stock Market, within the limits of our quotations.

The November coupons of the bonds of the Desmoines, Iowa, G. L. Co. will be paid in New York.

The coupons of the bonds of the Cedar Rapids G. L. Co. of Iowa, due October 1st, are now being paid in New York.

At auction, on the 3d inst., 20 shares of the Metropolitan G. L. Co. sold at 160½.

The following list is corrected weekly by GEORGE H. PRENTISS, Broker and Dealer in Gas Stocks, No. 30 Broad street, New York.

COMPANIES.	Cap. Stk.	Par.	Bid.	Askd.
Mutual Gas Light Co., N.Y. City	$5,000,000	$100	107	108
New York " " "	4,000,000	100	148	149
Metropolitan " " "	2,500,000	100	160	162½
Manhattan " " "	4,000,000	50	310	315
Harlem " " "	1,850,000	50	138	140
Westchester Co. " New York.	466,000	100	100	
Brooklyn " " " Brooklyn	2,000,000	25	250	
Citizen's " " "	1,200,000	20	154	155
People's " " "	1,000,000	10	101½	102
Nassau " " "	1,000,000	25	135	
Metropolitan " " "	1,000,000	100	112	113½
Williamsburgh " "	1,000,000	50	145	170
J. C. and Hob'n. G. L. Co. N.J.	386,000		160	
People's " " of J. C.			130	
Citizen's G. L. Co., Newark, N.J.				65
Hempstead " " L. I., N.Y.	40,000	100		100
Jamaica, " " " "	25,000	100		100
Citizens', Rochester, "		100	50	65
People's G. L. Co. Albany, "	1,000,000	100	45	
Mutual " Buffalo "	750,000	100	50	55
Troy G. L. Co., Troy, N. Y.			108	
Brockport, N. Y., G. L. Co.	25,000	100		90
Baltimore G. L. Co., Balt., Md.	2,000,000	100	190	
People's G. L. Co., Balt., Md	2,000,000	25	26¾	26⅞
Hannibal G. L. Co., Hanni., Mo.	100,000	100	90	
Lewiston G. L. Co., Lewis., Me	400,000	100		80
Chicago G. L. Co., Chicago, Ill.	2,000,000	100	135	
Derby G. L. Co., Derby, Conn.	160,000	100		80
Woonskt G. L. Co. Woonskt, R.I.	150,000	100	100	
Fort Wayne G. L. Co. F. W., Ind		100		105
North. Liberties G. L. Co. Phila.		25	29½	
Wilkes-Barre G. L. Co W. B. Pa.		50	70	
Washington G. L. Co., Phila.			42	43
Portland G. L. Co. Portland, Me	350,000	50	72	75
Hartford G. L. Co., Hartford, Ct	700,000	25	41	43
Boston G. L. Co., Boston, Mass.	2,500,000	500	777½	780
Chelsea G. L. Co. Chelsea, "	300,000		139	
Cambridge G. L. Co., Cam., "	700,000		132¾	
Louisville G. L. Co., Louis., Ky.			127	
Cincinnati G. L. Co, Cincin. O.			200	201
S. F. G.L. Co. San Francisco, Cal			95½	96
City G. L. Co. Montreal, Canada	1,440,000	40	125	127
Consumers G. L. (old.) Tor., Ont	600,000	50	129	132½
Halifax G. L. Co., Halifax, N.S.		40	149	

American Mines in London.

DIVIDEND MINES.

CLOSING PRICES—Oct. 23, 4 P. M.

No. of Shares.	MINES.	Par Value of Shares	Bid.	Total Dividends paid.	Last paid.
		£	£	£ s. d.	
10,000	Battle Mountain, c. (6240 sh.) part paid	5	....	0 10 0	Nov. 1872
15,000	Birdseye Creek. g. Cal.	4	1¾	0 14 0	June, 1874
40,000	Cedar Creek. g. Cal.	5	⅝	0 5 0	June, 1873
15,000	Chicago s. Utah	10	4	1 12 0	May 1875
21,000	ColoradoTerrible.s.-l.Col †	5	1¾	0 13 6	Jan. 1875
23,500	Eberhardt&Aur'a, s. Nev.†	10	8¼	1 0 0	July, 1871
60,000	Emma, g. s. Utah (35,000 shares part paid	20	1⅛	3 12 0	Dec. 1872
15,000	Ferguson, g. Cal	2	....	0 3 0	Ap'l, 1872
30,000	Flagstaff, s. Utah	10	⅛	4 2 0	July, 1873
30,000	Gold Run, hydr, Cal.	1	⅛	0 2 4	Oct., 1872
20,000	Last Chance, s Utah	5	¾	0 14 0	July, 1873
65,000	London & California. g.†	2	⅛	0 1 0	July, 1875
15,000	Mammoth Cop.c. s. Utah	10	....	0 5 0	Dec., 1872
5,000	Mountain Chief, s. Utah	10	....	0 4 0	Jan., 1873
54,000	Richmond Cons. s. Nev.	5	9	2 14 0	May, 1875
125,000	Sierra Buttes, g. Cal.†	2	1⅛	1 14 0	July, 1875
60,000	South Aurora, s. Nev.	5	7/	0 14 2	Nov., 1873
15,000	Sweetland Creek, g. Cal. †	4	2⅛	3 0 0	Dec., 1874
20,000	Tolima, g. s. (14,000 sh., £4/10 pd)	5	3	0 11 6	May, 1875

NON-DIVIDEND MINES.

		Paid.		Last price.	Last Call.
		£	s.	£	
30,000	Blue Tent, hydr. g. Cal.	5	0	5/	Fully paid
12,000	Camp Floyd, s. Utah	10	0	....	" "
6,000	Clifton, s. Col	5	0	....	Feb.. 1872
10,000	Crescent, g. Cal.	10	0	....	Fully paid
10,000	Douglas s. Georgetown, Col.	5	0	....	" "
35 000	Excelsior, Hyd. Gld. Cal.	6	0	7/	Dec . 1871
60,000	Exchequer, g. s. Cal	1	0	½	Fully paid
10,000	Goetzel Tunnel Co., Col.	7	0	....	" "
40,000	Holcombe Valley, g. C.	1	0	1	July,. 1873
20,800	Independence, g. Cal.	5	0	2	Fully paid
20 000	I. X. L., g. s. Cal	5	0	2½	" "
15,000	New Pacific, g. s. Nev.	0	0	5/	Dec., 1874
32,500	Ruby Consolidated, s	100		....	Fully paid
15,000	Saturn, s Utah	50		...	
10,000	Silver Plume, s Col	1	0	....	Fully paid
37,500	Snow Drift, s. Col	2	0	1¼	" "
30,000	Tecoma s. Utah	10	0	5/	" "
14,000	Utah, g.. s -l. Utah	5	0	⅛	" "

c. copper ; g. gold ; s. silver; s.-l. silver-lead ; † Quoted on the London Stock Exchange. All of the above are Limited Liability Companies.

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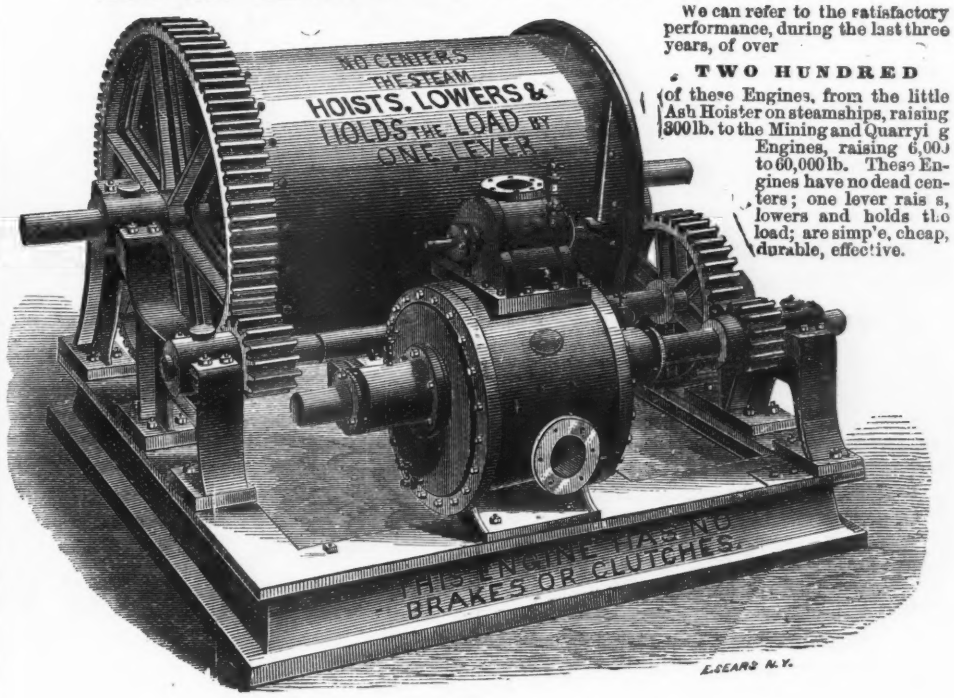

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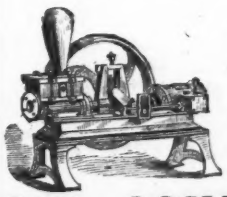

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Office of the CHICAGO SILVER MINING CO.
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A. S. HALLIDIE.—DEAR SIR: I have pleasure in stating that your Ropeway, put up at the Chicago Mine, Ophir District, Utah Territory, one year ago last summer, has been in constant use ever since, and with the most satisfactory results.

The line, as you are aware, is constructed over an extremely rugged country, one and one quarter miles in length.

For the first half mile or so, it is down a very steep mountain side, whence it passes over the brow of another one; thence it continues down Dry Canyon at an angle of fifteen to eighteen degrees.

The structure is an entire success, the cost entire of which has more than been saved already, although it has not been worked up to half its capacity.

In the estimate of earnings no account was taken of supplies sent to the mine, including water, etc., by no means an inconsiderable item. Truly yours, W. S. GODBE,
Manager Chicago S. M. Co. (limited.)

Supt. Office EMMA HILL CONSOLIDATED M. Co.
LITTLE COTTONWOOD, Utah, Dec. 17, 1874.

A. S. HALLIDIE, Esq.: Dear Sir—In answer to your inquiry, I have to report that the Ropeway (built August, 1872), continues to work splendidly, and with but little wear on the rope. It has been everything that was promised, and has proved to be the cheapest way to move ores on steep mountain sides.
Yours very truly, L. U. COLBATH, Sup't.

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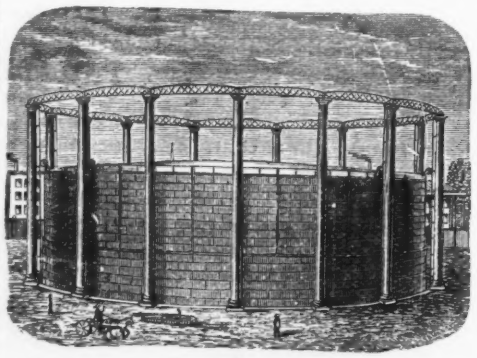

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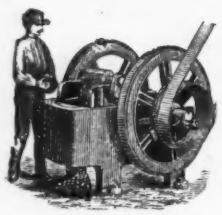

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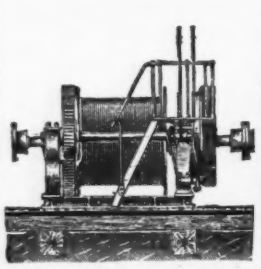

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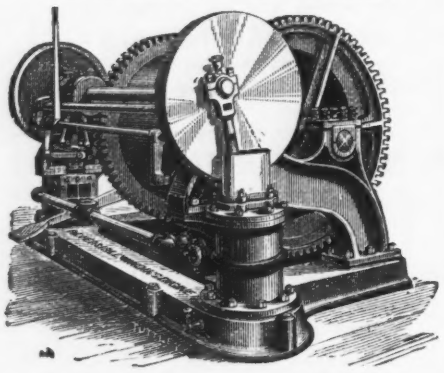

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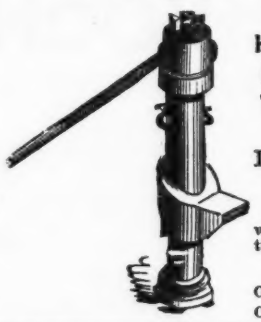

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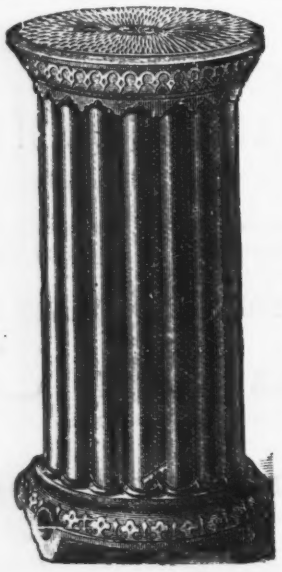

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